THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: WHITEHALL 9233 (12 lines)

Annual subscription payable in advance and postage free
British Isles and Abroad .....£2 5s. 0d.
Single Copies .....One Shilling
Registered at the General Post Office, London, as a Newspaper

VOL. 85 NO. 26 FRIDAY, DECEMBER 27, 1946

CONTENTS

	PAGE
Editorial Notes	705
Juvenile Employment on the Main-Line Railways	707
Transport Bill Weaknesses	707
Transport Bill and Traders	708
The Hull & Barnsley Railway	708
Leopoldina Railway Company	709
Railway Troops in the First World War	709
Letters to the Editor	710
The Scrap Heap	711
Overseas Railway Affairs	712
The Braking of Railway Vehicles	714
High-Power Freight Locomotives, Pennsylvania RR.	717
A Military Light Railway in East Africa	720
Power-Driven Hand Tools—9	722
Personal	723
Transport Bill Second Reading Debate	725
Notes and News	730

In view of an increase in our paper ration from the beginning of November, we are now prepared to accept a limited number of new home subscribers. The arrangements for accepting all new overseas subscriptions remain unchanged.

DIESEL RAILWAY TRACTION SUPPLEMENT

The January issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction will be ready on January 1, price 2s.*

Sixth Edition *Just Published*

BRITISH LOCOMOTIVE TYPES

This new edition has been completely revised and contains many additional plates. There are in all 140 outline diagrams, compiled from official drawings, giving main dimensions of all the standard and other principal classes of locomotives in use on the four main-line railways.

Full Cloth 9½ × 6*in.* 148 *pp.*

Price 8s. *Post Free* 8s. 6d.

THE RAILWAY GAZETTE
33, TOTHILL STREET, WESTMINSTER, S.W.1.

Transport Bill Debate Opens

MR. ALFRED BARNES, Minister of Transport, in the House of Commons on December 16, opened the three-day debate on the Second Reading of the Transport Bill. Elsewhere, we give a report of the opening stages of the debate, and a further report will appear in our next week's issue. The Minister commenced by a flat rejection of the Opposition demand for a public inquiry, and described the railway compensation proposals as "simple and equitable." He denied that in any circumstances it could be claimed that, when the State took over a service, it must continue in perpetuity the interest income of the persons involved. Sir David Maxwell Fyfe, who moved the rejection of the Bill on behalf of the Opposition, condemned the proposals as "confiscation of income and livelihood," and said that the Bill was the greatest dis-service the Government so far had done to the trade and industry of this country. Mr. Clement Davies, on behalf of the Liberals, said that, although his Party favoured public control of transport, he thought that it was a bad Bill, and that it should be reconsidered. He urged that the compensation question should be submitted to a tribunal. Nothwithstanding the widespread criticism in the country which has been aroused by the Transport Bill, the Government has indicated its intention to force it through the Commons as quickly as possible, and has rejected demands that the Committee Stage of the Bill should be taken on the floor of the House. Instead, it will be taken in Standing Committee, a procedure which not only limits the number of Members who may take part in the debate, but also has the effect generally of reducing the publicity attaching to this stage of an important Bill.

* * * *

The Transport Bill and Port Facilities

The General Council of British Shipping has issued a policy memorandum on the Transport Bill, and this has the support of many organisations representing users of ports, such as the Federation of British Industries, the Iron & Steel Federation, the Association of British Chambers of Commerce, and the Traders' Co-ordinating Committee. Sir Joseph P. Maclay, President of the United Kingdom Chamber of Shipping and Chairman of the General Council of British Shipping, presenting the memorandum, said that the extension of public ownership to include harbours and port facilities was viewed by shipowners with grave concern as tending towards unwieldy monopoly, and therefore increased cost, as well as putting the trading community at the mercy of arbitrary conditions. He condemned the Government's proposals as "this awful blight of centralised semi-political administration." The memorandum declares that the centralisation of control in a small Commission of the whole and elaborate transport and port structure of the country will restrict economic development and stifle initiative. It also criticises the wide powers given to the Minister of Transport, and states that, if the Bill is passed in its present form, a sense of complete uncertainty as to the future of the ports will discourage the pursuance of existing or prospective schemes of improvement.

* * * *

Civil Service Functions

The National Union of Manufacturers has put before the Prime Minister suggestions to obviate the further growth of the Civil Service, and has urged an immediate investigation into its functions and methods now in force to economise in human effort. Without criticising the individual Civil Servant, the Union points out that the ever-growing personnel of the Civil Service is now well over 700,000, and the annual cost approaches £400,000,000; to this must be added the personnel and cost of local government. The national administration alone already absorbs at least 4 per cent. of the working population, and industry cannot be denuded further if our industrial recovery is to achieve the rate of progress envisaged by the Government. The country cannot afford any further increase in the cost of the Civil Service, which has to be borne by industry, and which is a contributory cause of taxation being at a level that is throttling the enterprise of employer and employee alike. It therefore urges an immediate investigation into the functions and methods of Government departments, so as to eliminate any unnecessary activity. The Prime Minister has replied to the Union, agreeing that it is vital that the national administration should not make

excessive demands on our total manpower resources, and saying that all departments would welcome suggestions and assistance aimed at manpower economy.

* * * *

F.B.I. and B.E.C. to be Merged

At meetings of the Federation of British Industries and the British Employers' Confederation on December 10, a resolution was adopted agreeing in principle to the formation of one body, with one Council and President, and one staff. It was decided to prepare a scheme of amalgamation for submission to the members of the two organisations. Because there is a considerable difference in the structure of the two bodies, it is likely that a satisfactory scheme will take some time to work out. Hitherto, the British Employers' Confederation has dealt with matters affecting labour, and the Federation of British Industries with commercial and economic questions. Sir Clive Baillieu, President of the F.B.I., has made it clear that the identity of the constituent members of the two organisations will be maintained, and that no attempt is being made to establish a monopoly of membership or organisation. Moreover, the new body will not seek any powers other than those vested in the F.B.I. and the B.E.C. at present. The need for close contact between the two organisations became clearly apparent during the war, when the situation was met by the appointment of joint committees to handle specific subjects. The experience thus gained has shown the necessity for contact being still further developed and regularised on a constitutional basis if employers are to be able to make their full contribution in solving the many formidable post-war problems.

* * * *

G.W.R. Programme for 1947

Provided essential materials and manpower are available, the G.W.R. in 1947 plans to build at Swindon 110 new locomotives, 250 passenger coaches, 1,900 freight vehicles, and 240 containers. In addition, orders are to be placed with outside firms for 150 passenger coaches of the new standard type with large observation windows, more space in the compartments, and improved lighting, which were described in our November 15 issue. The permanent way programme will deal particularly with main-line routes, where it is an essential preliminary to the lifting of speed restrictions and return to prewar speeds. It covers about 370 miles of line which are scheduled to be relayed, re-railed, or re-sleepered. The company points out that the shortage of materials, particularly wood and steel, may prevent completion of this work. Major station improvements comprise the repainting of 200 stations, large and small, in the new shades of chocolate and cream. At other stations, small gangs of men will be employed to wash down the paintwork, carry out local repairs, and keep them as bright as possible until they can be repainted. A number of railway bridges also will be repainted, 255 miles of fencing renewed, and an additional weed-killer train constructed.

* * * *

The Position of the Festiniog Railway

One of the best-known railways to be excluded from the nationalisation provisions of the Transport Bill is the Festiniog Railway, which was the doyen of 2-ft. gauge steam-operated lines. It extends from Blaenau Festiniog to Portmadoc in North Wales, and has played a leading part in slate transport. Until the beginning of the recent war, it also maintained a popular passenger traffic, but this was suspended on September 16, 1939, and has not been resumed. Goods traffic has continued to be worked according to traffic requirements, but recently the volume has fallen to a very low figure, and trains were suspended on August 2 last. The line was closed officially on August 9, and only a skeleton staff retained. Unsuccessful negotiations were conducted with the Ministry of Transport with the object of securing a grant. Although the Controller of Slate wished traffic to continue in the interests of the quarry companies, the railway company was not prepared to keep open the line and run it at a loss. It was suggested by the Ministry of Transport that the quarry companies and the railway should work out an arrangement whereby some facilities could still be afforded to the quarry companies. With that object, an arrangement was made whereby the quarries concerned have taken over the working of some 650 yd. of the Festiniog Railway at the Blaenau Festiniog end, so that they may bring slate output from their private railways to the main lines of the G.W.R. and L.M.S.R. This arrangement began on October 7. The quarry companies undertook the handling and supply of motive power as well as maintaining the section of the line concerned. The arrangement is the subject of a rental and a rate per ton carried over this section; it is subject to one month's notice on either side. The only other facility which the Festiniog Railway provides is the use of wagons.

* * * *

Electric Safety Fences in Western Australia

In many parts of the world, the safety of trains approaching deep cuttings is assured by the provision of special fences controlling protective signals either mechanically or electrically. Probably the best-known installation in this country is in the Pass of Brander, Loch Awe, on the Callander & Oban section of the L.M.S.R. What is understood to be the first instance of this form of protection in Australasia, recently has been installed on the new deviation round Swan View tunnel on the Western Australian Government Railways, a sharply-curved line with high embankments and deep rock cuttings blasted out of the granite hillside. Here, 16-strand safety fences have been erected on each side of the line over a distance of 1,500 ft. Each of the 16 wires is energised with an electric current of such low voltage as to be harmless to animal life, but sufficient to control the automatic signals on this section and an indicator in Swan View signal cabin. So long as the fences are intact, these signals function normally, but the fracture of a single strand in either fence by a falling boulder or rock slide breaks the circuit, locking the signals at "danger" and showing a "stop" light in the cabin. One of these fences is illustrated on p. 724. Recent winter rains tested the installation by dislodging a 24-in. x 14-in. x 13-in. boulder, which fell and broke the bottom wire in one of the fences, thus giving instant warning to the signalman and to drivers.

* * * *

A British Tourist Board

It was announced recently by Lord Hall that the Government had decided to set up early in 1947 a tourist, catering, and holiday board, consisting of a paid Chairman and chief administrative officer, and twelve unpaid members. It is intended that the board shall include representatives of the industries concerned, and of Scotland, Wales, the Trade Union Congress, the Co-operative movement, and consumer interests. No legislation would be necessary to establish the board, and Lord Hall made it clear that it did not represent any attempt at nationalisation. His contention that visitors to this country must be provided with suitable accommodation, affording reasonable amenities, as otherwise their visits might do more harm than good, was warmly approved. It was essential that the Travel Association should play an important part in the new organisation in view of the valuable experience which it had accumulated.

* * * *

The Braking of Railway Vehicles

We publish elsewhere in this issue an abstract of a useful survey of present-day braking practice, by an Australian expert, Mr. J. White, M.I.Loco.E. Mr. White, who delivered his paper in Sydney during the war, draws attention to the numerous recent advances in compressed-air brakes which, because of the wide use of the vacuum brake in this country, are not so well known here as they should be. It is, however, a timely reminder of the immense potentialities of compressed air as a braking medium, and a tribute to the genius of George Westinghouse (who, incidentally, was born just 100 years ago) in abandoning steam for compressed air when first planning his great invention. The dangers arising from the tendency of the train slack to "run-in" violently during the early stages of a brake application are shown to be overcome largely by the quick-service feature. The emergency feature, by which air is "dumped" from brake pipe to atmosphere at each equipment, is another most valuable improvement. The "empty and load" brake graduates the intensity of braking to suit variations in the ratio of loaded to tare weights; now, even the tender brake power can be varied in accordance with the varying weight of water and coal carried. Means of eliminating wheel

sliding, with all its accompanying dangers, are available now, and progress is being made with the use of multiple-disc brakes instead of brake blocks acting on the tyres—an idea which has much to commend it as a means of avoiding overheated brake blocks. The art of braking high-speed passenger trains is being advanced greatly, particularly in the U.S.A.; and if the railways of this country are going to institute really fast runs in the future, the braking problems involved undoubtedly will have to be attacked as a special new task, without too much subservience to existing practices.

* * * *

Pennsylvania High-Power Freight Locomotives

Considered on a power output basis, the new Pennsylvania 4-4-6-4 fast freight locomotives described elsewhere, probably are the most notable examples of steam locomotive design so far built. On the testing plant at Altoona, one of these engines developed no less that 7,987 i.h.p., a record for the plant and more than likely a record for any steam locomotive yet constructed. This power was produced at a speed equivalent to 57 m.p.h. at 40 per cent. cut-off, and for a steam rate of 16 lb. per i.h.p. hour. The actual heat consumption by the cylinders was 21,160 B.Th.U. per i.h.p., meaning a cylinder conversion efficiency of 13·8 per cent. At this power output, the water evaporated reached 131,351 lb. per hr. when the coal fired per sq. ft. of grate area per hr. was 197·2 lb. and the boiler efficiency 49·3 per cent. In comparison with the 4-8-2 type locomotive, class "M1a," constructed in 1930, the new design represents an increase in power output of 68 per cent. for an increase in engine weight of only 59 per cent. The general design of the new locomotives follows closely that of the class "T1" 4-4-4-4 passenger engines, and shows that the Pennsylvania is well satisfied with this style of design.

* * * *

The Railway Position of 1847

The Railway Mania of 100 years ago is often held to have been responsible for the financial crisis towards the end of 1847, but many influences contributed, and the failure of over-optimistic railway promotion was intensified by them. The famous failure of the potato crop in 1846, and the consequent repeal of the Corn Laws, so altered the financial position of the country that there was financial stringency in 1847, compared with an excess of money awaiting investment a year earlier. New railway promotions showed a slight decline. Nevertheless, the mileage actually brought into use in 1847 totalled 740½, which was an increase of some 135 miles over the figure for the previous year, and the largest total yet to be recorded in British railway history. The principal openings are given this week in our Scrap Heap page.

* * * *

Juvenile Employment on the Main-Line Railways

ON behalf of the four main-line companies, the Railways Staff Conference has issued its useful "Guide to Juvenile Employment." This booklet of 16 pages is designed to give an outline of the scope and conditions of employment for boys and girls on our railways. After pointing out that the many and varied activities carried on by the railways offer a wide choice of interesting work for young persons leaving school, the system of recruiting is explained.

Each section of staff is then dealt with separately, beginning with the clerical and technical grades. The nature of the work falling to each group is described, scales of pay are set out in detail, and a general idea is given of the prospects of promotion. For instance, the particulars supplied about traffic operating, goods, and cartage staff occupy about five pages, and two pages are required for an account of the openings afforded by workshops in the mechanical, civil, electrical, and marine engineering departments.

Copies of the pamphlet can be obtained from the Secretary, Railways Staff Conference, L.M.S.R. Headquarters, Watford, Herts. It should be distributed widely to Labour Exchanges, school teachers, and others who are concerned in placing young persons in employment. We cannot call to mind any previous publication covering the whole field of recruitment, and we hope that the enterprise of the Railways Staff Conference in preparing this booklet will lead to a large increase in the number of candidates for railway employment.

Transport Bill Weaknesses

ALTHOUGH quite naturally a good deal of criticism is being directed by stockholders, the Stock Exchange, and investment trusts against the confiscatory terms on which the Government proposes to acquire railway stockholdings, the main point to be considered in connection with the Transport Bill is whether it is likely to achieve its purpose. This is that of providing an efficient, adequate, and properly integrated system of public transport and port facilities in Great Britain. The British Transport Commission, consisting of five persons appointed by the Minister of Transport, is to be the body responsible for this herculean task. Although it will be assisted by five executives—also appointed by the Minister—who will be responsible for railways, docks, and inland waterways, road transport, London transport, and, at a later date, hotels, it is clear that the Commission, although subject in much too large a degree to dictation by the Minister, nominally will have complete control over the whole field of finance and policy.

Thus, the whole task of re-organisation and co-ordination will be the Minister's responsibility. This task will include the immediate responsibility for the operation of the railways, including railway-owned docks, hotels, steamships, and road transport; the acquisition of long-distance road transport undertakings and their operation, and the exercise of control over many thousands of other road operators; the preparation of schemes for the co-ordination of transport facilities; the preparation of charges schemes covering the whole of the services and facilities provided by the Commission; and the introduction of adequate negotiating machinery for all labour under its control.

The successful accomplishment of even one section of this task will be a notable achievement, and it is remarkable that, apart from a few vague generalisations, the Bill is completely silent as to the principles which should guide the Commission in commencing these very difficult tasks. Indeed, the Bill makes it clear that the Commission is merely a convenient means by which the Minister of Transport or—what is more likely in practice—the permanent officials of the Ministry of Transport, with no transport experience, will control almost every phase of the nation's transport. It is also most disturbing to find that Parliament will have no effective means of controlling the decisions of the Minister, and even the Commission's annual report to Parliament, if the Minister so desires, will omit any reference to the manner in which he has directed it during the year.

The five executive bodies are to act in accordance with the directions of, and act as agents for, the Commission, but the members are to be appointed, not by the Commission, but by the Minister. It would seem, therefore, that while they are to be responsible for the day-to-day management of their parts of the undertaking, they will have no control whatever over policy and planning. One practical difficulty at once will arise; will the Railway Executive, in addition to being responsible for the railways, also be responsible for railway-owned docks, railway-owned road transport, railway hotels, and railway steamships. If not, how will they be disintegrated? A pertinent question, seeing that the purpose of the Bill is the integration of all such services. And how will these activities be controlled in the interim period? Another unanswered question is to what extent the London Transport Executive will control London transport. It will be appreciated that the four main-line railway companies carry many thousands of passengers daily on journeys entirely within the L.P.T.B. area. In normal circumstances, the receipts from such traffic are pooled with those of the Board, and the interests of the five parties concerned are watched by the Standing Joint Committee. How can this traffic be entirely divorced from the main-line companies or the Railway Executive?

The functions of the Executive Committees cannot be defined until a scheme has been worked out by the Commission and approved by the Minister. Such a task needs very careful and detailed consideration, particularly as it affects the present comprehensive railway activities. Over ten years elapsed after the passing of the Railways Act, 1921, before the organisations of the four main-line railway companies crystallised into their final shape and the heavy task which confronted them was completed. But the requirements of the Bill create a much greater problem than the amalgamations, and particu-

XUM

larly those associated with co-ordination and integration, on which matters the Bill is peculiarly silent, and it would appear impossible for the Commission to make much progress with its task in the few months between the date of the passing of the Bill and the vesting on January 1, 1948.

In this connection it is necessary to bear in mind that the abolition of all directors on the vesting date will create an immediate gap in the present railway organisations which must be filled immediately; otherwise, the essential day-to-day management of the railways, which involves the daily authorisation of large numbers of works schemes of varying magnitude, the acceptance of many tenders for stores, etc., and the completion of agreements and contracts, will be seriously hindered with consequential adverse effects on trade and industry.

So far as the Road Transport Executive is concerned, the national road organisation can emerge only slowly by a lengthy process of acquisition of individual firms or lorries. As they are acquired, the question will at once arise of how their future activities are to be correlated with rail facilities, and this will require an immediate answer. Surely the managements who have operated so successfully rail and road transport in the past must be in a position to tender expert advice as to how this very difficult and most vital task is to be accomplished. It would be the height of folly to crib, cabin, and confine transport within a framework of rules and regulations laid down by Ministry officials without regard for the practical considerations involved. These questions show how essential it is that there should be a full public enquiry at which those who have spent a lifetime in the service of transport can submit their proposals for achieving the Bill's intention. Finally, to illustrate one only of the many practical difficulties which will arise, it is interesting to note that businesses such as household removals, the carriage of liquids in bulk, indivisible loads, etc., are not to be acquired by the Commission. Consequently, their railway undertaking, thanks to the railway ownership of Pickfords and other haulage concerns specialising in these particular methods, will be competing for this business with private firms. How long will this be allowed to last?

* * * *

Transport Bill and Traders

ALTHOUGH it would be reasonable to suppose that the compulsory acquisition of railway stock in exchange for Government stock carrying a much lower rate of interest might lead to a reduction in railway rates and charges, the Bill holds out little comfort for traders in this direction. As many industries have been built up on exceptional rates, any alteration in their general level might handicap seriously their competitive position and involve the loss of vital markets, and it is useful, therefore, to see what protection or assistance traders may expect under the Bill.

In the first place, the Bill gives no indication whatever of the principles on which charges are to be fixed in future for any of the different forms of transport—an omission which may have a serious effect on trade and industry generally. The existing Railway Rates Tribunal is to be abolished and replaced by a statutory Transport Tribunal which will also deal with transport matters at present falling under the jurisdiction of the Railway & Canal Commission. The Commission is required to submit to the Tribunal within two years, or such longer period as the Minister may allow, charges schemes covering the whole of the Commission's services and facilities, and also the conditions of carriage. These schemes, however, may provide for fixed, maximum, standard, or minimum charges, with special treatment in specified cases, or may leave the Commission to determine the charges to be made! Although machinery is provided for holding a public inquiry into such schemes, the opportunity for political pressure for giving special treatment is obvious.

These provisions will arouse little enthusiasm amongst traders who can only quote forward contract prices on the basis of stable railway rates; an even more vital point is that, pending the introduction of such charges schemes, the Minister, *without public inquiry*, may increase charges by regulation and the Commission may increase any existing exceptional rate up to 60 per cent. of the standard. Further, the Minister may by regulation over-ride any undue preference, or any other statutory provisions which appear to him unnecessary in relation to the Commission's services and facilities!

There is no provision in the Bill which will ensure for traders the use of reasonable alternative facilities at reasonable rates, and they are concurrently to be deprived of the opportunity of developing freely their own transport services when they think that they could provide thereby a more economical service. There is also no provision in the Bill to prevent traders being called on to pay higher rates and charges solely to remunerate capital which the Commission may expend on large replanning and development schemes, such as electrification, which the Minister or the Commission may desire carried out, but which are unnecessary for the efficient operation of transport.

Finally, Clause 90 provides that the Commission will not have to prove annually before a statutory tribunal—as the railways have had to do since 1921—that the management of its undertakings has been carried out with efficiency and economy. Clause 3 provides that all the businesses of the Commission are to form one undertaking, but there is not the slightest hint of how the efficiency of the various sections of the undertaking will be judged; a fact which will handicap traders should they desire to lodge an objection with the Transport Tribunal. Altogether, it is reasonable to expect that these provisions of the Bill will cause traders serious concern, and may materially affect the well-being of many industries and communities dependent on those industries.

* * * *

The Hull & Barnsley Railway

A NEAT booklet on the Hull & Barnsley Railway* has been added to the Oakwood Library of Railway History, which deals with the smaller British lines of pre-grouping days. It is a welcome addition to the growing list of railway histories. This year we have also had a history of the Furness, which was reviewed in our September 6 issue. To the railway sentimentalist the publication of these volumes brings on a bad attack of nostalgia. The author of the latest history is Dr. G. D. Parkes, of Keble College, Oxford, who resided near Hull during the last 20 years of the Hull & Barnsley's independent existence and was familiar with its working. He has relied mainly on W. W. Tomlinson's "North Eastern Railway" for the earlier history of the line. The facts are set out clearly, but the record does not convey any vivid notion of the great controversies which raged at Hull some 70 years ago over railway and dock projects. In those days, J. A. Spender had gone from Balliol College, Oxford, to edit Hull's own newspaper, the *Eastern Morning News*. Many years later, he penned a lively narrative of "the fury and the literary fret" that distinguished the local politics of the "Third Port" round about 1880.

Dr. Parkes describes the Hull & Barnsley line in detail, with the aid of a map, and also gives particulars of the Alexandra and King George docks. He next touches on the railway's train services, but does not write much about its traffic statistics. The rest of the booklet is taken up with information about locomotive, carriage, and wagon stock. To those whose hobby it is to collect such data, the booklet, which is admirably printed and illustrated, will be a most welcome addition to their railway libraries. Of the railwaymen who ran the line from 1885 to 1922, only Mr. Edward Watkin and Mr. Matthew Stirling are mentioned. We are told that Mr. Watkin "had risen to be chief clerk in the Coal Audit Office of the Great Central Railway before his appointment as General Manager of the Hull & Barnsley Railway in 1905." If Mr. Watkin had not become Mineral Manager of the Great Central (then Manchester, Sheffield & Lincolnshire) in 1887, and so acquired an intimate knowledge of the expanding coal trade, he never would have been selected to succeed Mr. Walter H. Wood at Hull.

Dr. Parkes concludes that the Hull & Barnsley played a useful part in the development of trade on the Humber, but he is not so certain that its contribution was commensurate with the effort and money expended on it. A few figures may throw a little light on this question. Before amalgamation, the Hull & Barnsley operated a route-mileage of 106. In a typical year, there originated on the system 336,000 passengers, 925,000 tons of merchandise, 1,114,200 tons of coal and coke, and 206,000 tons of other minerals. Large quantities of coal from pits on other railways, especially the Midland, also passed over the

* "The Hull and Barnsley Railway." By G. D. Parkes. The Oakwood Press, 19, The Drive, Sidcup, Kent. Price 3s. 6d.

H. & B. rails to Hull. By the year 1910, the total coal carryings were more than 270,000 tons a month. To the end of the chapter, the "Barnsley" was primarily an outlet for shipment coal, though it made strenuous efforts to attract cargoes from overseas to its spacious Alexandra Dock, and in 1911 gave a lead to other dock authorities by despatching a special trade commissioner to tour Australia, New Zealand, and South Africa in the interests of the port of Hull.

It follows that the traffic requirements of Hull during the last quarter of the 19th century would have been met adequately by modernising the facilities at the old docks and constructing a new deep-water dock on their eastern side; these developments would have involved a fresh layout of the railway lines and yards serving the dock estate. A comprehensive scheme of improvements would have provided much better working arrangements than have ever existed in the dock area. It would have cost less than the £10,000,000 ultimately spent on the Hull & Barnsley system and could have been designed to eliminate the level crossings for which Hull is notorious.

A lack of imagination at the North Eastern Railway headquarters was largely responsible for the different course which events took. The Chairman during the critical period, Mr. George Leeman, and the General Manager, Mr. Henry Tennant, handled questions affecting Newcastle, Teesside, and Leeds in competent and understanding manner, but they failed to see that a state of emergency was developing at Hull. The situation called for prompt action and a conciliatory policy. The York authorities moved slowly and neglected to remedy various matters which caused discontent on Humberside. An improvement in passenger train services and the provision of better coaching stock might have helped to tone down some of the demands for goods facilities. So far was Mr. Tennant from making concessions that he doubted whether the Hull & Barnsley Railway ever would be constructed, even after the Act of 1880 had been passed. Perhaps his long experience as an accountant misled him. His calculations convinced him that there was no commercial case for building the proposed railway, but accountancy could not quell a local agitation conducted with unusual energy. If the North Eastern Railway management had been sympathetic towards Hull's somewhat ebullient aspirations, and had had counter-proposals for letting its trade have plenty of elbow-room, the cost of driving a rival railway across the Yorkshire Wolds could have been saved.

On two occasions the Hull & Barnsley was nearly acquired by the Midland Railway, and for a period there was a service of express passenger trains between the Midland's Sheffield station and Hull *via* Cudworth. If under "grouping" the Midland Railway had been the nucleus of a fifth group, the Hull & Barnsley obviously would have been one of its components. Actually, the Railways Act, passed in August, 1921, combined the main-line railways in four groups and included the Hull & Barnsley in the "Eastern" group. The N.E.R. board lost no time in taking advantage of the provision in the Act that any two constituent companies in any group might submit a preliminary scheme to the amalgamation tribunal. Proposals agreed with the Hull & Barnsley board met with no opposition, and on April 1, 1922, the independent management of the smaller line came to an end.

* * * *

Leopoldina Railway Company

THE report of the Leopoldina Railway Company for the year ended December 31, 1945, shows increases in all classes of traffic, so that gross receipts, at £2,983,461, were £482,307 higher than in the preceding year. Working expenses increased from £2,238,498 to £2,692,090, giving net receipts of £291,371, an increase of £28,715. After deducting £23,990 for the premium for conversion of debentures and transfer to reserve for redemption of debenture stock, and £378,753 to meet the liabilities postponed under the scheme of arrangement, there was left a loss for the year of £103,534. The debit balance brought in from 1944 was £2,120,586, giving a total debit balance carried forward to 1946 of £2,224,120. As a result of the higher working expenses, the operating ratio for the year increased from 89·5 per cent. to 90·23 per cent.

Excluding amounts provided for renewals, working expenses in 1945 were higher by £540,000 than in 1944. Of this amount, expenditure on wages, including Brazilian Pension Fund and other statutory contributions relating to staff, accounted for some £450,000. The cost of fuel was higher by £100,000, or 14 per cent., principally on account of an increase of 23 per cent. in the price of wood fuel, which is becoming progressively scarcer and more expensive. The total fuel bill, at £710,000, compares with a figure around £210,000 for pre-war years. Some operating figures are shown below:—

	1944	1945
Miles open	1,918	1,918
Passengers	36,186,372	36,466,764
Goods and livestock, tons	2,026,079	2,153,983
Operating ratio, per cent.	89·5	90·23
	£	£
Passenger receipts	717,479	826,267
Goods and livestock receipts	1,505,489	1,755,859
Gross receipts	2,501,154	2,983,461
Working expenses	2,238,498	2,692,090
Net receipts	262,656	291,371

The number of passengers carried increased by 280,392 to a total of 36,466,764. There was a considerable transfer of traffic from first class to second class on the suburban services where control is becoming extremely difficult in peak hours on account of the congested state of the trains. First class passengers decreased by 1,803,809, and second class increased by 2,084,201. The passenger receipts of £826,267 show an increase of 15·16 per cent. Tonnage of luggage and parcels traffic rose from 162,859 tons to 174,046 tons, or 6·87 per cent., and receipts from this source increased by 22·36 per cent. from £246,232 to £301,279. Goods traffic showed an increase of 127,904 tons, or 6·31 per cent. Receipts from goods traffic, at £1,755,859, were higher by 6·31 per cent. than in the preceding year. A large number of works was carried out during the year for account of the improvements surcharge, the total amount spent being £183,608. Eight Mikado type locomotives were received from North America and placed in service during the year.

* * * *

Railway Troops in the First World War

ACQUAINTANCESHIPS and ways of life which become familiar in wartime, fast recede into the outer regions of memory once normal life is resumed. During a war, the practice of looking ahead to the time when it will be over is soon abandoned as a form of wishful thinking, and abnormal circumstances become accepted as a permanent background to living. Their impermanence is not realised until well-known places are revisited, and seen again without those who once gave them life.

Formal war histories do not recapture this personal aspect, but it is done from time to time by authors whose association with events was too intimate for them to think of themselves as historians. Their books are welcomed by all who played a part in the events described. At the beginning of the 1914-18 war, a company of platelayers drawn from the British railways was formed, with the title of the 111th Railway Company, Royal Engineers. The day-to-day history of this company* has been written by Mr. A. F. Westcott, who retired recently from the position of Permanent Way Inspector at Trowbridge, G.W.R., after completing over 46 years' service with that railway. Mr. Westcott joined the 111th (Rly.) Coy., R.E., on its formation on November 14, 1914, and takes his story from the "activity, mud, and tents" of Longmoor in those days to the disbandment of the company in January, 1919.

The narrative is followed by a section in verse, in which the author fills in the background of discomfort, danger, and occasional relaxation, to the record of achievement in his earlier pages. During the four years the company was in France and Belgium, mostly in forward areas, it carried out a great deal of permanent way work, bridging, and other duties. A noteworthy undertaking was the construction in three months of a working marshalling yard on a withy bed at Abbeville. This and certain other works carried out by the company are illustrated by folding diagrams. For its activities in providing the means of keeping the armies supplied during the critical war years and in the final victorious advance, the "Three Ones" earned the second and well-merited nickname of "Second to None." Mr. Westcott's account will revive many memories, and will be of special interest to all who served with the 111th company in the first world war.

* "The 111th Railway Company, Royal Engineers, or 'The Three Ones'." By A. F. Westcott. Edward Everard Limited, 38, Bread Street, Bristol. Price 5s. 5d. post free

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Time Lost by Operating Errors

"Stanilands," Radwell, Felmersham,
Beds. December 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with considerable interest the letter from Mr. J. W. Walker in your issue of December 6, and hasten to support his statement. Living alongside the L.M.S.R. main line from St. Pancras, between Sharnbrook and Oakley, and travelling between Wellingborough and London quite frequently, I can appreciate fully his own and other travellers' difficulties on that section of the line. Perhaps it will interest you to know that the 4.20 ex-St. Pancras is far from being alone in its troubles! Wellingborough to Bedford seem to delight in allowing a slow train to depart immediately in front of an express, thereby holding up the faster train at every signal until it is possible to overtake—a difficulty very apparent on the Midland Division, with stations in most cases possessing platform only on the passenger road.

I am inclined, like Mr. Walker, to blame impracticable timetable arrangements and present operating methods, rather than the engine crews and the engine itself. Many times have I admired the spirit of an enthusiastic driver in an attempt to pick up time lost by signal checks that could, by a little forethought on someone's part, have been avoided.

I fear that, like a good many other things today, it is a case of no-one bothering. On the Western Divisions, much the same conditions exist. The 10.5 a.m. and the 10.20 a.m. from Northampton to Euston are sufferers in the same way. The 7.41 p.m. from Crewe, which train gives a connection at Blisworth for Northampton arriving at 10.10 p.m. (?), is another, to mention a few.

Yours faithfully,
H. W. FRANKLIN

Passenger Class Distinctions

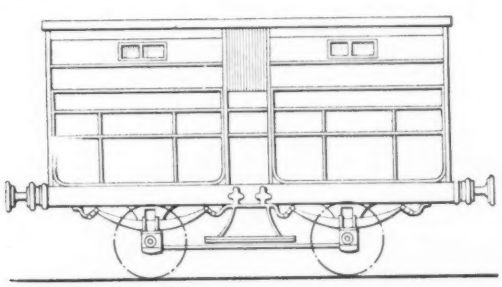
The Railway Club, 57, Fetter Lane,
London, E.C.4. October 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Mr. Charles E. Lee has refused—as one would only expect—to incorporate the "soot-bag system" legend in his book entitled "Passenger Class Distinctions." Not so Acworth (*alias* "Ackworth" as some secondhand booksellers love for some reason to call him) who solemnly stated ("Railways of England," at page 42):—

"The management of the Manchester & Leeds Railway adopted what was known as the 'soot-bag system.' Sweeps were hired to enter a third-class carriage which had been specially kept for the purpose 'of persons in a superior position,' and then shake out the contents of their bags."

I think that this legend must have originated from the ill-placed jocularity of Mr. William Crawshay, of the Northern



York & North Midland Railway third class carriage of 1845 *as illustrated in a contemporary report*

& Eastern Railway, who at a special meeting of that company held at the London Tavern on December 2, 1841, said that he "thought that no railway establishment could be considered complete without two or more chimney sweeps with their soot bags. Whenever he saw an individual respectably dressed getting into a third class carriage he would send a sweep along with him. (Hear, hear, and a laugh.)" *The Railway Times*, December 4, 1841, p. 1,267.

To pour oil on the resulting troubled waters of indignant correspondence, Mr. Crawshay wrote a long letter to *The Railway Times* (issue of December 18, 1841, p. 1,302) saying:—

"Can yourself or anyone else imagine that such a remark from the Chairman of a railway company could be intended otherwise than as jocular?"

It was not suggested by Mr. Crawshay, or any of the other correspondents of *The Railway Times*, nor in that paper's editorial comments, that any such "soot-bag system" had, in fact, been adopted on the Manchester & Leeds Railway, and I do not know how the legend barnacled itself on to that railway.

If the Manchester & Leeds Railway had, after 1841, acted on Mr. Crawshay's happy suggestion, this fact could hardly have escaped notice when in 1845 Parliament was curious to know in what manner the railways were discharging their obligations to third class passengers under Gladstone's Penny-a-Mile Act of 1844.

On February 26, 1845, the House of Commons called for plans and specifications of the third class carriages adopted by the various railways, and the answer to this requisition is contained in a Return (Command Paper No. 419) ordered to be printed on June 27, 1845, from which reproductions of many of the plans on a reduced scale are incorporated in Mr. Lee's book showing what the Board of Trade had approved as carriages suitable for third class passengers.

Perhaps "King" Hudson's York & North Midland Railway provided the brightest gem, for the dimensions of its third class carriage, licensed for 48 passengers, were:—

Length 16 ft., width 8 ft. 3 in., height only 6 ft.

It carried no night lamp and even daylight was only permitted to struggle in through two small windows (22 in. by 8 in.) on each side about 5 ft. from the floor.

Yours faithfully,
KENNETH BROWN

Transport Bill and Compensation

Maltravers House,
Arundel. December 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—A comparison of the amounts paid in compensation for loss of life and injury to persons, and loss of, and damage to, goods, etc., before and after nationalisation of transport should prove interesting, as presumably the railways and other undertakings owned by the State will be on the same footing as the Post Office, which pays compensation only as an act of grace and does not compensate for damage caused by delay.

In this respect, at any rate, commercial undertakings owned by the State should not be outside the law.

CHARLES DENT
Sometime General Manager,
Great Northern Railway

Concrete for Railway Construction

"Bridge House," Obridge,
Taunton. December 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I regret the unavoidable delay in replying to Mr. Brisby's letter in your November 15 issue, but as a railway engineer I would assure him that it would be quite impossible to make any appreciably greater use of concrete for railway work. So far as bridges are concerned, the shortages of timber have necessitated the incorporation of concrete even in circumstances where it would not normally have been used. This material has, in consequence, never before been so widely embodied, wherever possible, in bridge construction.

In any event, concrete is not altogether an ideal material for unfettered use in bridge work, owing to its weight, nature, and larger sectional area compared with steel. Unless concrete bridges are precast, which would impose a limit on span, they are slow to erect, and most bridge renewals have to be accomplished in a matter of hours. Moreover, the constructional depth (the greatest depth from rail level to the lowest portion of the bridge superstructure) in most railway bridges is already so restricted that it is often impossible to accommodate the depth required for concrete construction.

Mr. Brisby obviously is unfamiliar with the design of constructional concrete when he asserts that such a structure must not be regarded as made up of parts under stress. That is, in fact, just what most concrete structures are. Even a simple floor system is a combination of various members with differing stress reactions. In any case, it is difficult to trace any connection between this point and the use of concrete for railway purposes.

I can only assure Mr. Brisby that the chief engineers concerned are fully alive to the value of concrete in railway construction, and exploit its use to the utmost, provided it is the most suitable material for the circumstances in consideration.

Yours faithfully,
H. M. PEARSON

The Scrap Heap

NEXT WEEK'S RAILWAY CENTENARY

Teignmouth to Newton Abbot (5¼ miles), South Devon Railway, opened December 30, 1846.

* * *

Comments on Transport Bill

BADLY THOUGHT OUT AND BADLY PUT TOGETHER

The grave doubt about the scheme as drafted is whether it can possibly achieve its purpose, which is the co-ordination of transport so as to provide an efficient system at the lowest economic cost. The inertia of large-scale organisation would in any case be a big problem in any nationalisation scheme, and the proposed set-up raises this issue in a number of particularly acute forms. The Bill appears to have been both badly thought out and badly put together.—*From "The Times."*

ADMINISTRATION AND OPERATION DISORGANISED

The Transport Commission charged with the task of integration will be the creature and servant of the Minister. There will be nothing he cannot do, and the Commission will be able to do nothing without his consent. If the Minister is to drain off technical staff from operative transport—the only source open to him to recruit an efficient technical advisory body—he must disorganise the existing administration and operative machine and the services.—*From "The Financial Times."*

* * *

100 YEARS AGO

From THE RAILWAY TIMES, *December* 26, 1846

BY ORDER of the POSTMASTER-GENERAL.—GREAT WESTERN RAILWAY.—On and after Wednesday, the 30th instant, in compliance with the Orders of the Postmaster-General, the Night Mail from Exeter to Paddington will start at 9 p.m., instead of 9 35 p.m., as heretofore; it will leave Bristol at 11 50 p.m., Gloucester 11 40 p.m., Oxford 1 15 a.m., and the other Stations in like proportion. Particulars of which may be obtained at the Railway Stations.

The train from Teignmouth in connection with the night mail will start at 8 10 p.m.

By order of the Directors,
CHAS. A. SAUNDERS, Secretary.

* * *

Railway Centenaries of 1947

January 1, Parkside west curve opened (½ mile), London & North Western Railway.

January 14, Ely North Junction to Peterborough opened (28¼ miles), Eastern Counties Railway.

February 15, Harrington to Whitehaven opened for goods only (4½ miles). Opened for passenger traffic March 19, Whitehaven Junction Railway.

February 15, Wymondham to Dereham opened (11½ miles), Norfolk Railway.

March 1, Heaton Junction to Morpeth opened (14½ miles), Newcastle & Berwick Railway.

March 1, Bishopstoke to Salisbury (Milford) opened (22 miles), London & South Western Railway.

March 1, Kilmarnock to Barassie opened (7¼ miles), Glasgow, P.K. & Ayr Railway.

March 1, Irvine Harbour (1), Swinlees (1½), branches (2½ miles), Glasgow, P.K. & Ayr Railway.

March 3, Seghill to Blyth opened (4½ miles), Blyth & Tyne Railway.

March 15, Chichester to Havant opened (8¼ miles), London, Brighton & South Coast Railway.

March 16, Shipley to Keighley opened (6¼ miles), Leeds & Bradford Railway.

March 29, Tweedmouth to Chathill opened (19¾ miles), Newcastle & Berwick Railway.

March 31, North Shields to Tynemouth opened (1 mile), Newcastle & Berwick Railway.

April 1, Colchester to Hythe opened for goods only (1½ miles); opened for passenger traffic July 1, Colchester, S.V., S. & Halstead Railway.

April 5, Grange Lane to Birkenhead Docks opened (1 mile), Chester & Birkenhead Railway.

April 19, Londonderry to Strabane opened (14½ miles), Londonderry & Enniskillen Railway.

April 21, Kendal to Windermere opened (8¼ miles), Kendal & Windermere Railway.

April 28, Cockermouth to Workington opened (9 miles), Cockermouth & Workington Railway.

May 3, March to Wisbech opened (7¼ miles), Eastern Counties Railway.

May 10, West Croydon to Epsom opened (8 miles), London, Brighton & South Coast Railway.

May 11, Reedham to Lowestoft opened for goods only (11¼ miles); opened for passenger traffic July 1, Lowestoft Railway & Harbour Railway.

May 17, Scotland Street to North Bridge opened (½ mile), Edinburgh, Leith & Granton Railway.

May 24, Swalwell Branch opened (½ mile), Newcastle & Carlisle Railway.

May 24, Dundee to Perth (Barnhill) opened (20 miles), Dundee & Perth Railway.

June 1, Southampton to Dorchester, and Poole (1¼ miles) branch opened (62½ miles), Southampton & Dorchester Railway.

June 14, Havant to Portsmouth opened (7¼ miles), L.B. & S.C.R.

June 14, Thames Wharf to North Woolwich opened (2½ miles), Eastern Counties Railway.

June 14, Stratford Junction south-west curve opened (¼ mile), Eastern Counties Railway.

June 17, Pilmoor to Borobridge opened (5¾ miles), York & Newcastle Railway.

June 21, Portobello to Niddrie Junction (E. & D.) opened (1 mile), North British Railway.

June 28, Dublin to Enfield opened (26½ miles), Midland Great Western Railway.

June 28, Kildare (Cherryville Junction) to Maryborough opened (18½ miles), Great Southern & Western Railway.

June ?, Howth branch completed opened (¾ mile), Dublin & Drogheda Railway.

July 1, Chathill to Morpeth opened (29½ miles), Newcastle & Berwick Railway.

July 1, Southwell to Rolleston opened (2½ miles), Midland Railway.

July 1, Minster to Deal opened (8¼ miles), South Eastern Railway.

July 12, Newtongrange to Gorebridge opened (2¼ miles), North British Railway.

July 20, Newton Abbot to Totnes opened (8¾ miles), South Devon Railway.

July 14, New Hales to Musselburgh opened (1¼ miles), North British Railway.

July 28, Yatton to Clevedon opened (3½ miles), Briston & Exeter Railway.

July ?, Wheatsheaf Junction (Wrexham) to Minera opened (6¼ miles), Shrewsbury & Chester Railway.

August 3, Huddersfield to Heaton Lodge Junction opened (3¾ miles), Huddersfield & Manchester Railway.

August 3, Wear Valley Junction to Frosterley opened (10¼ miles), Wear Valley Railway.

August 3, Blackburn to Sough opened (5 miles), Bolton, Blackburn, C. & W. Yorks Railway.

August 10, Church Fenton to Spofforth opened (13½ miles), York & North Midland Railway.

August 10, Narborough to Swaffham opened (5¾ miles), East Anglian Railway.

August 17, Cambridge (Chesterton Junction) to St. Ives opened (13¼ miles), Eastern Counties Railway.

August 17, St. Ives to Huntingdon opened (5¼ miles), East Anglian Railway.

August 21, Bentley to Hadleigh opened (7 miles), E.U. & Hadleigh Junction Railway.

August 28, Shieldhill (3) and Slamannan Junction (1) branches opened (4 miles), Edinburgh & Glasgow Railway.

September 3, Maryborough to Ballybrophy opened (15¾ miles), Great Southern & Western Railway.

September 6, Long Eaton Junction to Codnor Park opened (13 miles), Midland Railway.

September 8, Keighley to Skipton opened (9 miles), Leeds & Bradford Railway.

September 10, Carlisle to Beattock opened (39¾ miles), Caledonian Railway.

September 20, Burntisland to Cupar opened (24½ miles), Edinburgh & Northern Railway.

September 20, Ladybank to Abdie (Lindores) opened (4½ miles), Edinburgh & Northern Railway.

October 1, Keymer Junction to Lewes opened (9 miles), London, Brighton & South Coast Railway.

October 4, York (Bootham Junction) to Market Weighton opened (20¾ miles), York & North Midland Railway.

October 20, Filey to Bridlington opened (13½ miles), York & North Midland Railway.

October 23, Cheltenham, Landsdowne Junction-St. James opened (1 mile), Great Western Railway.

October 23, Gloucester loop (¾) and "T" branch opened (1 mile), Great Western Railway.

October 26, Downham to Ely North Junction opened (14¼ miles), East Anglian Railway.

October 26, Swaffham to Sporle opened (3 miles), East Anglian Railway.

November 1, Bescot to Walsall opened (1½ miles), South Staffordshire Railway.

November 1, Oldham, Mumps extension opened (1 mile), Lancashire & Yorkshire Railway.

November 24, Thurgoland mineral branch opened (1¾ miles), Manchester, Sheffield & Lincs. Railway.

November ?, Brynmally and Ffrwydd branches opened (5 miles), Shrewsbury & Chester Railway.

December 1, Rugby to Stafford (Trent Valley) opened (49¼ miles), London & North Western Railway.

December 6, Enfield to Kinnegad opened (9¼ miles), Midland Great Western Railway.

December 8, Lewes (Southernham Junction)-Newhaven opened (5¾ miles), London, Brighton & South Coast Railway.

December 9, Lindores to Glenbirnie opened (1½ miles), Edinburgh & Northern Railway.

December 21, Reading to Hungerford way opened (25½ miles), Great Western Railway.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

WESTERN AUSTRALIA

Settlement of Railway Strike

A settlement was reached on November 22 of the strike by the Locomotive Engine Drivers, Firemen, and Cleaners Union, which had begun on November 6. As reported in *The Railway Gazette* of November 29, the strike broke out after six men refused to take Australian Standard Garratt locomotives into traffic on November 4, and were suspended from duty. Normal train services were resumed on November 22, after a stoppage which had lasted 16 days.

The settlement was agreed to between the Premier of Western Australia and the representatives of the union. Among its terms are the conditions that the Government is to support an application for the re-registration of the union; and that the Commissioner of Railways is not to oppose an application by the union for the annulment of all current legal proceedings against the union and its members. An industrial board is to be set up consisting of two union representatives, two technicians, and a non-technical independent chairman. No Australian Standard Garratt locomotive is to be returned to service unless first approved by the industrial board.

The board also will draw up plans for carrying out the modifications to the Australian Standard Garratt locomotives recommended by the Royal Commission, and will specify the localities and routes where these engines will run. The maximum speed of the engines is to be 25 m.p.h. in accordance with the Royal Commission's report.

VICTORIA

New Main-Line Rolling Stock

Construction of six steel coaches of the same type as those used in the "Spirit of Progress" express has been put in hand by the Railways Department. It is expected that the first will be completed early next year. Fourteen more will be built in due course.

The bodies will be of Cor-Ten steel, and the coaches will have double-pane windows of unbreakable glass, seats with folding arm rests, and air conditioning. In addition to the diffused lighting system, every passenger has a concealed reading lamp. Rubber cushions in the bogies, draft gear, and automatic couplings minimise vibration. The only change contemplated in these vehicles compared with existing "Spirit of Progress" stock will be in the washroom accommodation at each end of the car. A partition will divide the lavatory from the washroom, and each convenience will be entered through a separate door.

BRAZIL

Medical Train for Railway Staff

A special train has been equipped by the Rede Mineira de Viacao for rendering medical assistance to the staff along the line. The train is composed of three coaches, and carries X-ray and dental equipment. Accommodation for the train staff is provided in the first coach, which carries also the fuel necessary for a 25-kW. electric generating set. The second coach accommodates the medical staff, consisting of doctors, a dentist, and nurses, in two six-berth compartments, and provides also two consulting compartments. In the third coach a modern X-ray apparatus is installed, with a dark room and examination compartment. Examinations of the whole staff and their families will be made with this equipment in an effort to stem tuberculosis. The X-ray apparatus can be worked from the electrical supply at stations, or will be operated by the generator on the train when necessary, such as at stops between stations for the examination of platelayers and permanent way staff.

San Paulo Station Destroyed by Fire

A serious fire broke out at the Luz Station, San Paulo, of the San Paulo Railway, on the morning of November 6. The station building was destroyed and a luggage and parcel depot suffered heavy damage. The fire coincided with the signing of the terms of expropriation, which was to take place the next day, and already doubts are being raised as to whether the loss should run to the account of the San Paulo Railway, or to that of the Government.

UNITED STATES

Rebuilt Pier at East Boston

Pier No. 5, at East Boston, served by the Boston & Albany line of the New York Central, has been reconstructed as a first step in improvement of the company's marine facilities at the Port of Boston. The rebuilt pier is equipped with two large electric gantry cranes, giving it a higher loading and unloading capacity than any other pier in the port. It has two railway tracks, capable of accommodating 16 wagons, leading into the Grand Junction Terminal Yard, which has a capacity of 400 wagons. Immediately adjoining is a reserve yard for 600 wagons, whence a 9-mile double-track branch leads to the main Boston & Albany marshalling yard at Beacon Park. From Beacon Park the Boston & Albany line runs throughout the length of Massachusetts, and connects with the New York Central to serve the mid-West.

Pier No. 5 is 450 ft. long, and has been widened from 30 ft. to 40 ft. by driving 267 creosoted 75-ft. piles. Motor vehicles can drive alongside the railway tracks. The two new cranes have a capacity of 50 tons each, and span both tracks. They have 130-ft. booms for loading both inshore and offshore.

SOUTH AFRICA

Springs—Welgedacht Railway

The new 5-mile line between Springs and Welgedacht is in course of construction. Minor embankments on the level stretch running parallel with the Payneville native township to Blesbok Spruit will be followed by bigger embankments and two bridges. The new line will provide Springs with a direct route to Delmas, Witbank, Middelburg, and Lourenço Marques. At present all traffic from Witbank has to go *via* Welgedacht to Apex Junction, and thence along the Johannesburg-Springs line to Springs.

The owners of small holdings at Welgedacht, on which about 700 families live, will benefit by the new line, especially those who are market gardeners. A big mining expansion programme is also in view for the Welgedacht area, which will have a large marshalling yard. It is expected that the new line will be completed within nine months.

INDIA

Survey for Karachi-Bombay Route

The Railway Board has sanctioned a new scheme for the construction of a direct Karachi-Bombay rail route, and a survey is to be undertaken shortly. The scheme, it is estimated, will cost Rs. 8 crores, and improves on the one sanctioned earlier in the year. The Sind and Rajputana Deserts will be avoided; the journey between Bombay and Karachi will be reduced from 50 to 26 hours, and the distance from 999 miles to some 600. The route, after crossing the Indus, will run along the Cutch hinterland before reaching Bombay.

Radio Communication on N.W.R.

The North Western Railway has spent Rs. 4 lakhs on wireless communication. The Lahore headquarters of the railway is now linked by radio with all divisional headquarters. In addition, there are four subsidiary links, namely, Lahore-Ludhiana, Delhi-Ambala-Bhatinda, Multan-Samasata, and Karachi-Sukhar. At Delhi the N.W.R. is responsible for an inter-railway link connecting the Railway Board with headquarters of railway administrations at Bombay, Calcutta, Madras, and Gorakhpur. A portable receiving and transmitting set has been installed in a carriage which can be taken to the site of an accident or accompany an inspection train, thus facilitating relief measures by keeping in touch with headquarters.

U.S.S.R.

Technical Training Schemes

According to preliminary estimates, the number of railway transport employees in the Soviet Union will have to be increased by more than 500,000 during the five-year plan [see *The Railway Gazette* of August 23.—Ed., *R.G.*]. This figure will include more than 350,000 employees engaged directly in railway traffic operating. As the latest scientific and technical innovations are to be introduced, many of the present employees will have to be given further training. The total number to be trained and retrained will amount to about 1,000,000 persons. A special fund to meet the expense has been allocated by the State for this purpose. The trainees will receive free tuition, and the majority will be maintained entirely at State expense (receiving food, uniforms, and accommodation free of charge) on the same basis as the students of the industrial training and railway schools.

To provide the railways with large numbers of skilled workers, the industrial training and railway schools will be extended, as well as the system of apprenticeships. The railway and industrial training schools will increase their output of graduates from the figure of 56,000 achieved in 1945 to 197,000 in 1950. Altogether, these schools are expected in the next five years to train 624,000 skilled workers. More than 150 new premises will be built for this purpose.

Among those to be trained are: 50,000 drivers, 100,000 assistant drivers, 100,000 firemen, 80,000 repair mechanics, 15,000 boiler men, 6,000 electric welders, and 10,000 pointsmen. The electrification of 3,110 miles of railway and the conversion of a number of lines to diesel traction will involve the training of 4,000 motormen.

and 4,000 assistant motormen; 15,000 electricians; 4,000 diesel drivers; 4,000 diesel mechanics; 4,000 engine repair mechanics; and 2,000 diesel engine repair mechanics. —A. Trotyakov.

FRANCE

Improved Punctuality

Permanent way repairs were pursued actively throughout the spring and summer of 1946 in order to minimise speed restrictions. After reaching a maximum in 1945, these restrictions had been reduced by about 75 per cent. last October. Punctuality has been improved by a vigorous campaign on all lines, and the standard achieved has been equal to that of 1938. The percentage of fast trains more than 15 min. late was 8 per cent. in July, 1946, against 7 per cent. in July, 1938.

Paris-Basle High-Speed Railcar

A high-speed railcar service was introduced between Paris (Est) and Basle on December 16. It is designed mainly to enable business men from the eastern regions of France to spend an afternoon in Paris and to be home again in the evening of the same day. The railcar leaves Basle at 6.30 a.m. and arrives at Paris at 12.15 p.m., thus covering the distance of 326·6 miles (526 km.) in 5 hr. 45 min. In the reverse direction, Paris is left at 5.10 p.m.; Basle is reached at 10.55 p.m. The railcar has limited accommodation for first and second class passengers only. In addition to the ordinary fares, a special supplement of fr. 130 (fr. 4·85 Swiss) is charged, irrespective of class, for the whole distance Paris-Basle. For the sections Basle-Mulhouse and Basle-Belfort, the supplements are fr. 10 and fr. 20 respectively (40 centimes and 75 centimes Swiss). Before the introduction of the railcar service the fastest runs on the Paris-Basle line were made by the "Arlberg Express," covering the distance in 10 hr. 15 min. from Paris and in 10 hr. from Basle, both being night runs.

DENMARK

Effect of the U.S.A. Coal Strike

Although Denmark at present receives coal from the Ruhr, Poland, and a small amount from Great Britain, the supply to a large extent depends on the United States. Therefore, the recent coal strike in that country had a very serious effect in Denmark. Railway passenger services, which in the spring were increased to 72 per cent. of the pre-war service, were from December 2 cut down to 47 per cent. of pre-war. The percentage reduction of coal-burning steam trains was actually higher than that figure, which includes diesel services, all of which were maintained during the strike although none were run in wartime. For instance, the five through connections (apart from the *Lyntog* diesel trains) between Copenhagen, Funen, and Jutland in both directions were reduced to one each way. All trams and suburban trains in Copenhagen stopped running at 11.30 p.m. from December 2, instead of at 1.30 a.m.

Long Welded Rails

Before the war a new and heavier type of rail was introduced on the Danish State Railways. The heaviest type formerly used weighed 45 kg. (99¼ lb.) per m., but the new rail weighs 60 kg. (132¼ lb.) per m. The first rails of the new type were laid on the main line in Jutland from Aarhus to the north. The 15-m. (49-ft. 3-in.) rails were welded together in pairs, thus forming 30-m. (98-ft. 6-in.) lengths. They are fastened directly to the birch sleepers by four screws, gripping the edge of the rail foot, no baseplate being used.

On the main line from Copenhagen to Roskilde, track relaying and strengthening has been begun with the new 132¼-lb. rails, and four rails are being welded together in 60-m. (197-ft.) lengths. The welding is carried out electrically at the State Railways welding plant at Fredericia. These long rails are laid with rather narrow gaps at the joints, and, therefore, they must not be laid in very cold or very hot weather. The rail temperature must not be below 32° F., at which the gaps between rail ends are fixed at 13 mm. (0.51 in.). Switches have not yet been designed in this new heavy rail, so switches of the 99¼-lb. type are used.

Publications Received

A Short History of the Railway Carriage. By R. W. Kidner. (A Short History of Mechanical Traction & Travel, Part 5). Chislehurst, Kent: The Oakwood Press, 30, White Horse Hill. 7¼ in. × 5 in. 24 pp. and 8 art plates. Paper covers. Price 3s. 6d. net.—Unlike the locomotive, the railway carriage has not attracted the attention of historians to any great extent, and any connected story of its development requires original research. In his series of brochures intended for eventual binding into one volume giving a short history of mechanical traction and travel, Mr. R. W. Kidner has now included a very welcome section outlining the history of the British railway carriage, and quoting the seven standard authorities to whom he is indebted for many details. Thus, this should prove of service to anyone attempting a full-size history, apart from its inherent reference value. It comprises pages 81-104 of the eventual volume. The text is interspersed with Mr. Kidner's familiar thumb-nail sketches.

Principles of Direct Current Electric Traction. A book for Tramway, Trolleybus and Railway Engineers and Personnel and all students of Electric Traction. By Douglas W. Hinde and Herbert E. Ingham. London: Geo. Newnes Limited, Tower House, Southampton Street, W.C.2. 8¼ in. × 5¼ in. 248 pp. Illustrated. Price 15s.—This book is not intended as a guide to the detailed work to be undertaken by the designer, for which an extensive treatise would be essential, but it gives a general review of the main technical considerations, although in places the references necessarily are brief. It enables the student to obtain a broad overall conception of the position of direct current traction, and the numerous illustrations depict the best practice. The explanations of the systems of control and similar items are written clearly and allow those not versed in traction work to gain a good understanding of the principles involved. A complete text book, in the strict sense, would have to be large and expensive, and the authors of the present work have had to impose considerable limitations. Their book, nevertheless, will be helpful, we think, to many who wish to know what is being done in this important field of transport engineering.

Design '46: A Survey of British Industrial Design as Displayed in the "Britain Can Make It" Exhibition. British Council of Industrial Design. London: His Majesty's Stationery Office. 11 in. × 9 in. 144 pp. Fully illustrated. Paper covers. Price 6s.—This is a handsomely-produced official brochure, with an opulence of printing and paper that is denied to the private publisher, dealing with the design aspect of the wide range of domestic consumer goods. There are more than 20 articles by experts in their respective fields, and the illustrations comprise some 350 pictures of goods in the exhibition. The intention to have a transport section in the exhibition was abandoned "for purely practical reasons," but the brochure includes an interesting article by Mr. Christian Barman setting out a viewpoint on transport design which emphasises the deep influence of geographical conditions.

Speedbird.—With its November issue, the quarterly publication of the British Overseas Airways Corporation has changed its title from "Wings Over The World" to "Speedbird." The contents include illustrated articles of aeronautical and general travel interest as before. In the November issue, an Atlantic pilot describes the work of himself and his crew during the 15-hr. flight, from the planning of the route, altitude, and speed in the light of weather conditions before take-off, to the conference after landing at which the journey is discussed and reports are made on which the operating authorities base their plans for the most economical and efficient methods of maintaining the service. Another article describes the work of the corporation's design committee, which is responsible for planning the decoration, furnishing, and equipment of aircraft and airports.

Pneumatic Blow Gun.—We have re-received from the Hymatic Engineering Co. Ltd., Redditch, an illustrated pamphlet describing a new blow gun of a scientific design that ensures maximum jet velocity from the available air pressure. From the standard shop line pressure of 100 lb. per sq. in., a stream speed of nearly 2,000 ft. per sec. is attained. The released air, instead of being dissipated throughout a wide angle, reaches the object in a narrow stream, with more energy and saving of air. The gun is of a shape that makes it easy to handle and reduces fatigue.

Bearings and Castings.—For many years the firm of Charles Carr Limited, Smethwick, which controls the activities of the Non-Ferrous Casting Co. (Birmingham) Ltd., has supplied Lily brand axlebox bearings to British and overseas railways, and examples of the different types of bearings made by the firm are given in a new illustrated folder, which indicates the class of work that can be handled by the special plant installed at the Smethwick works. Also included in the folder are some of the essential points to be observed in connection with the testing of 20-ton and 12-ton wagon bearings. From the same firm, also, comes a useful booklet giving weights and measures of Lily brand chill-cast phosphor bronze rods and tubes.

The Braking of Railway Vehicles*

Observations on the compressed-air braking of trains in Australia, with comments on European and American practice

THE braking of freight trains should aim especially at the achievement of an adequate safety factor, as represented by the stopping distance and by operation on heavy falling grades. It should avoid also excessive violence of train slack movement resulting from varying rates of retardation of vehicles in the train during the early stages of a brake application.

Records made of the fall of air pressure in a closed pipe, representing the brake pipe of 31-car and 100-car trains (1,250 ft. and 4,000 ft. long respectively) charged to 70 lb. per sq. in. and then exhausted from one end at a rate corresponding to the emergency rate of exhaust used on air-brake equipments, show clearly the tendency of train slack to "run in" during the early stages of a brake application. A full brake application was regarded as having been secured by a reduction in train pipe pressure of 20 lb. per sq. in., that is, from 70 to 50 lb. per sq. in. With a 100-car train a sufficient pressure reduction to ensure full application on the first car (next to the engine) was secured in 2 sec.; but on the 100th car it took 40 sec. to secure a brake pipe reduction of only 12 lb. per sq. in. Such results reveal the probability of an extremely violent "run in" of the train slack.

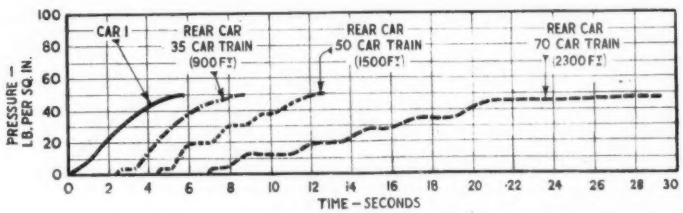

CAR 1
REAR CAR 35 CAR TRAIN (900 FT.)
REAR CAR 50 CAR TRAIN (1500 FT.)
REAR CAR 70 CAR TRAIN (2300 FT.)
PRESSURE – LB. PER SQ. IN.
TIME – SECONDS

Fig. 1—Brake cylinder pressure rise (emergency application) with various lengths of train

The intensity of the forces arising in such circumstances is not always fully appreciated. Tests in the U.S.A. with 100-car trains, using a dynamometer car, have shown that buffing forces exceeding 500 tons were set up frequently. In the tests with pipes representing 31-car and 100-car trains, it was found that the rate of pressure drop of the 100-car train was only about one-twentieth of that of a train one-third the length; this is significant as indicating the serious effect of increased train length on braking performance, and particularly on violence of train slack movement. Violent train slack movement also tends to occur during brake release.

Reduction of Train Slack Movement

Means of minimising train slack movement caused by brake operation are:—

(1) The introduction of a "quick service feature," which limits venting of brake pipe pressure at each vehicle and accelerates brake action throughout the train.

(2) The reduction of the difference in braking power between the head and the rear end equipments, by reducing the rate at which brake cylinder pressure is built up at the head of the train. The forces tending to "run the slack" can be diminished by about 45 per cent. by this means alone.

(3) The use of an "emergency feature," by means of which, during an emergency application of the brakes, air is "dumped" from the brake pipe to the atmosphere at each equipment, causing a very rapid development of brake cylinder pressure.

(4) The use of a "retarded recharge feature" which, during the period of recharge of equipments, automatically slows the rate of recharge of main and auxiliary reservoirs, compared with the rear end; thus, brake pipe pressure is established more rapidly at the rear, and all equipments are charged more uniformly.

(5) The retarding of the brake cylinder release rate, which, by reducing the difference in brake cylinder pressure between front and rear equipments, tends to prevent violent "run-out" of the train slack during the release of the brakes.

The principal circumstances affecting safety of freight trains as represented by the stopping distance are: (*a*) increased length of trains; (*b*) increased speed; and (*c*) increased ratio of gross weight to tare.

(*a*) The effect of increased length of train upon the ability to secure a rapid brake application is illustrated by Fig. 1 which shows, for emergency applications, the rate of brake cylinder pressure development on the rear car of 35-, 50-, and 70-car trains (lengths 900, 1,500 and 2,200 ft. respectively). To secure 40 lb. per sq. in. brake cylinder pressure on the rear car needed 6½ sec. with a 35-car train, 10½ sec. with 50 cars, and 20 sec. with 70 cars. An increase of about 50 per cent. in train pipe length (from 50 to 70 cars) resulted in an increase of 90 per cent. in the time needed to secure 40 lb. per sq. in. pressure in the brake cylinder.

(*b*) The effect of increased speed is shown by practical experience, which indicates that the stopping distance increases at a somewhat greater rate than the square of the speed, because of the inferior frictional properties of brake blocks at high speed. An increase in maximum speed of freight trains from 30 m.p.h. to 40 m.p.h. would raise the stopping distance by almost 100 per cent. and introduce serious braking problems.

(*c*) The effect of the high ratio of load to tare in modern wagons is to reduce the braking force of the loaded vehicle, so that stopping distance is increased. The means available to offset stopping distance from such causes are: (i) the use of the "emergency feature" mentioned above, by which a full application of the brake (under emergency conditions only) can be secured throughout the train; for example, on a 70-car train with this feature, a full application can be secured in 5 sec.; the corresponding interval without this feature is 25-30 sec. (The use of this feature, however, is accompanied by technical and economic difficulties.) (ii) "empty and load brakes," by which the braking power of the loaded vehicle is increased substantially over that of the empty vehicle, and

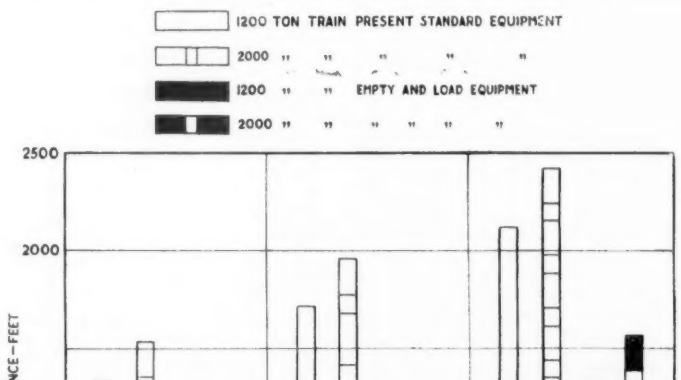


Fig. 2—Stopping distances recorded with standard and "empty and load" equipment, with 1,200 and 2,000-ton trains

* Abstract of a paper, "Notes on Braking of Railway Vehicles with Special Reference to Compressed-Air Operated Brake Equipment," delivered by Mr. J. White, M.I.Loco.E., before a Joint Meeting of the Institution of Locomotive Engineers and the Institution of Engineers, Australia (Sydney Division), in Sydney on December 7, 1943

the stopping distance correspondingly reduced. This brake feature increases the brake block pressure either by an increase in leverage (as is usual in Europe) or by making additional pressure available in the brake cylinder. The device depends for its working on the deflection of the springs caused by the load in the vehicle.

The changeover of the mechanism from "empty" to "load" is performed manually in Europe, and automatically in the U.S.A.; the author considers that the latter is preferable, as the equipment is reliable and easily maintained. The advantages derived from the application of "empty and load" brakes to freight vehicles are illustrated by Fig. 2, which shows the approximate stopping distances for loaded freight trains. The higher brake block pressures thus set up make it essential to use clasp brakes, particularly with four-wheel vehicles. The total wear of brake blocks can be reduced by at least 25 per cent. with this arrangement.

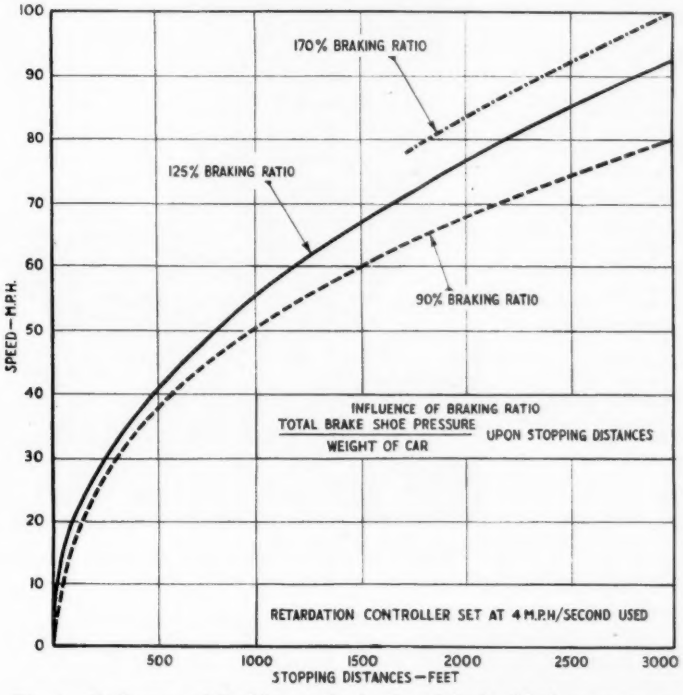


Fig. 3—Influence of braking ratio (ratio of brake block pressure to weight of car) on stopping distances, "Zephyr" high-speed train, U.S.A., 1934. A retardation controller set at 4 m.p.h. per sec. was used

The main consideration affecting safety of operation on gradients is that with standard equipment it is necessary to release the brakes while recharging the auxiliary reservoirs throughout the train. Train length, speed, and the ratio of load to tare of vehicles also affect the safety of working on gradients.

The need for releasing the brakes when recharging the auxiliary reservoirs means, when descending long gradients, that the train must be slowed considerably, or even stopped, at each brake application, before releasing, to allow maximum time for the recharging process. On heavy falling gradients this results in an irregular train speed, with a high maximum and a low average. To overcome this drawback, the rate of brake cylinder release is retarded substantially to 50-10 lb. per sq. in. in 110 sec. in U.S.A., and 50-10 lb. per sq. in. in 55 sec. in Europe. This ensures that when brake equipments are moved to the release position to recharge the auxiliary reservoirs, the brakes remain effective (though to a diminishing extent) as the brake cylinder pressure slowly reduces, for a period sufficient to ensure an effective recharge of equipments. This practice ensures (a) a higher average brake cylinder pressure, and (b) an ability to maintain uniform and high average speed, with avoidance of high maximum speed.

If future plans to improve passenger train services should involve running at higher speeds, it probably will be necessary to improve the braking efficiency of at least some special trains by faster applications of the brakes and the use of higher braking forces. Excluding consideration of electro-pneumatic brakes, the only means available of substantially accelerating the brake application is the use of the emergency feature already referred to. Its adoption would enable a full application to be secured, under emergency conditions, in about 2 sec. on the rear car of a 1,000-ft. train, instead of the 8 sec. necessary without the emergency feature.

As regards the use of higher braking forces, it is now the practice both in the U.S.A. and in Europe, to use braking forces up to 200 per cent. (of the vehicle weight) at high speed, in passenger trains with maximum speeds of 75 m.p.h. or over. The braking force is graduated automatically to about 100 per cent. at 30 m.p.h. Special devices, usually electro-pneumatically controlled, are used to graduate the release of the brakes, and may be responsive to speed or rate of deceleration.

Fig. 3 shows test results of equipment using 170 per cent. braking force, compared with standard equipment utilising 90 per cent. braking force. From a speed of 80 m.p.h. the stopping distance was 3,000 ft. with 90 per cent. braking force; this distance was reduced to 2,200 ft. with 125 per cent. braking force, and to 1,800 ft. when the latter was raised to 170 per cent. The tests also showed that trains using 170 per cent. braking force could be stopped from 80 m.p.h. in the same distance as that in which trains utilising 90 per cent. of the braking force could be stopped from 65 m.p.h.

An outstanding difficulty with high-speed trains has been serious overheating of brake blocks, particularly with heavy cars, and efforts have been made to minimise the trouble. In the U.S.A. the trend of development seems to be towards the use of multiple-disc brakes secured to the axle and located between the wheels. In Europe, one favoured development enabled eight brake blocks per axle to be used; it comprised clasp brakes operating on the "sides" of the wheel instead of the tread.

Another difficulty attending the use of high braking forces in high-speed passenger service is the increased tendency to wheel sliding. Some of the latest equipments in the U.S.A. incorporate a device which, in the event of a wheel tending to slide, automatically reduces the brake cylinder pressure on the vehicle concerned until the sliding condition is corrected, when pressure is restored automatically.

Efficiency Requirements

The desiderata of an efficient locomotive brake are: ample compressor capacity; adequate main reservoir volume; provision for cooling compressed air and precipitating moisture in the main reservoir system; and efficient means for controlling the train and locomotive brakes, either together or independently. Improved braking efficiency can be secured by the use of an "automatic variable load brake" applied to the tender and controlled by the depth of water in the tank. Such installations are in service in Australia. In large tenders, the hitherto unbraked weight of water and fuel may add 80 tons or more to the tare weight, by which the braking force has been limited hitherto.

The brake equipment for electric locomotives generally is similar to that applied to steam locomotives. It is necessary frequently to provide for double-end operation, and electric locomotives working on long, heavy gradients usually are equipped with regenerative or rheostatic brakes, with which it is necessary to use a regenerative interlock to prevent the locomotive wheels from sliding.

Multiple units in electrified suburban services may require, in the future, higher accelerations and decelerations, to increase track capacity and to raise the average train speed. Track capacity can be increased also by running longer trains. One of the principal shortcomings of equipments now used in multiple-unit service in Australia is the relatively low accelerations and decelerations during "peak" periods of traffic. The accelerating and braking forces applied to multiple-unit cars in Australia are based on the tare weight, and as the gross weight of a train during the peak periods usually will exceed the tare weight by at least 20 per cent., it is apparent that accelerating and braking rate are reduced proportionately at those times, when maximum rates are most necessary.

In New York, it has long been the practice to apply variable-load equipment to each vehicle of multiple-unit trains. This equipment automatically adjusts, according to gross load, the setting of a current-limiting relay controlling power to the traction motors; it also adjusts the brake cylinder

control valve so that a substantially uniform acceleration and retardation is obtained under all loading conditions. On the London tubes, similar results are produced by a retardation controller which, during the period of braking, keeps the deceleration to a constant figure, irrespective of the loading of the train. The device comprises a mercury-filled U-tube; under the influence of deceleration the mercury rises in one leg of the tube until, at a predetermined acceleration, it completes a circuit preventing any additional brake cylinder pressure from being established. If the deceleration should tend to increase with declining speed of the train, the mercury will rise slightly higher in the tube and complete another circuit which partially releases brake cylinder pressure, until the deceleration falls slightly and the mercury recedes in the tube and breaks the release circuit. A substantially uniform deceleration thus is achieved irrespective of loading.

The improved efficiency available from such means of control is obtainable only with electro-pneumatic brakes, which are used almost universally in multiple-unit service; over plain pneumatic brakes their efficiency is well established.

Attention has been directed for some years past to the use, in multiple-unit service, of eddy current, dynamic, and similar forms of electric braking. Trials held in New York in 1937, with 15-car trains, showed that decelerations up to 4 m.p.h. per sec. were obtained consistently, without tendency to wheel sliding. The eddy current and dynamic brakes provided all the braking force to a low speed, when their effect declined and the electro-pneumatic compressed air brakes automatically took up the required proportion of the braking. If wheel sliding tends to occur with either eddy current or dynamic brakes, the electric braking force declines, and permits the wheels to revolve again at normal speed. In the London Transport underground stock, many cars have the Metadyne control, which enables traction motors to be used for braking purposes, like eddy current or dynamic brakes. Dynamic brakes in conjunction with air brakes already are much used on tramways in the U.S.A., and there seem to be no insuperable difficulties in adapting them to multiple-unit service.

An Adjustable Railway Coach Seat

Designed on the hammock principle for comfort, and for economy in weight and space

DURING the recent war, when frequently air personnel had to remain seated for prolonged periods, special attention was paid to the design of seats which would give maximum comfort with minimum fatigue; other requirements in seats designed for this purpose were economy in weight and space and ability to withstand considerable stress.

The practical ideas then evolved are now being put to commercial use, and, because the above requirements are equally applicable to railway travel, special interest attaches to the railway coach seat made by the firm of Christie-Tyler Limited, Bridgend, Glam., several designs of which are shown in the accompanying illustrations, and which was developed originally for the Air Ministry during the war.

This seat, which is a British invention, is made on the principle of a deeply upholstered hammock, fixed at one end and pivoted at the other. On sitting down, the pivot comes under the thigh, so that, whether the legs are stretched or drawn up, the movement the thigh imposes on the pivot causes the hammock to conform to the shape of the body and fit snugly into the small of the back.

In the design of the seat, which is thus adjustable to movement of the body, tests have been carried out to ensure that, whether the traveller is sitting upright, fully reclined, or in any other position, there is always complete support and comfort, and that every inch of the back is held. There are no hard edges to impede circulation. The arm rest folds down into the seat.

The seat, which has an aluminium alloy frame, is of unit construction and can be made up in units of 2, 3, or 4, the assembly being such that any section of the seat can be removed easily for the purpose of effecting upholstery repair. The light tubular metal frame can be dismantled quickly.

A seat specially designed for a South American railway saloon coach

A three-unit coach seat designed for use on British railways

Turning to the illustrations on this page, the one below shows a Christie-Tyler coach unit designed for use on British railways, and the photographic reproduction above shows a seat somewhat similar in design to one being considered for the Columbia National Railways. We understand, also, that the firm is now developing a single-unit seat for saloon-type railway coaches which will enable the traveller not only to sit or recline in comfort, but also to lie at full length.

G.W.R. STATION GARDENS WIN PRIZES.—Cash prizes, totalling £300, have been awarded by the G.W.R. to the 151 winning stations in the company's Station Gardens Competition, held this year for the first time since 1940. The highest award, a special prize of £5, went to Theale (London Division); Totnes (Plymouth Division); Redbrook-on-Wye (Newport Division); Rhoose (Cardiff Division); Leamington (Birmingham Division); Peplow (Chester Division); and Llandinam (Oswestry Division).

High-Power Freight Locomotives, Pennsylvania RR.

Four-cylinder engines with a 4-4-6-4 wheel arrangement and a maximum starting tractive force of 115,800 lb. including the booster. At 57 m.p.h. a maximum of 7,987 i.h.p. has been developed

By E. C. Poultney, O.B.E., M.I.Loco.E.

FOR working fast freight and heavy passengers trains, the Pennsylvania Railroad has for some years used 4-8-2 locomotives of notably high capacity. These engines, which have 27 in. × 30 in. cylinders, 72 in. driving wheels, and steam at 250 lb. per sq. in. pressure, exert a rated tractive force of 64,550 lb. At the time of their introduction they were considered outstanding examples of this type, both in design and performance.

They comprise two different classes, "M1," built during 1926-1927 by the Baldwin Locomotive Works and the Lima Locomotive Works Inc., and "M1a," erected by the same builders and also at Altoona, Pa., in 1930. The "M1" class is used for freight and the "M1a" for both passenger and freight services. The "M1a" engines differ slightly from the "M1" in certain details and are equipped with feed water heaters which add to their capacity. When tested on the plant at Altoona, one of the "M1a" engines developed a maximum of 4,662 i.h.p. at 240 revolutions per min., equal to an engine only weight of 83.7 lb. per i.h.p.

The maximum evaporation realised was 96,561 lb. of water per hr., which, based on the evaporative heating surface of 4,702 sq. ft., gives a rate of evaporation of 16.9 lb. per sq. ft. of heating surface per hr.

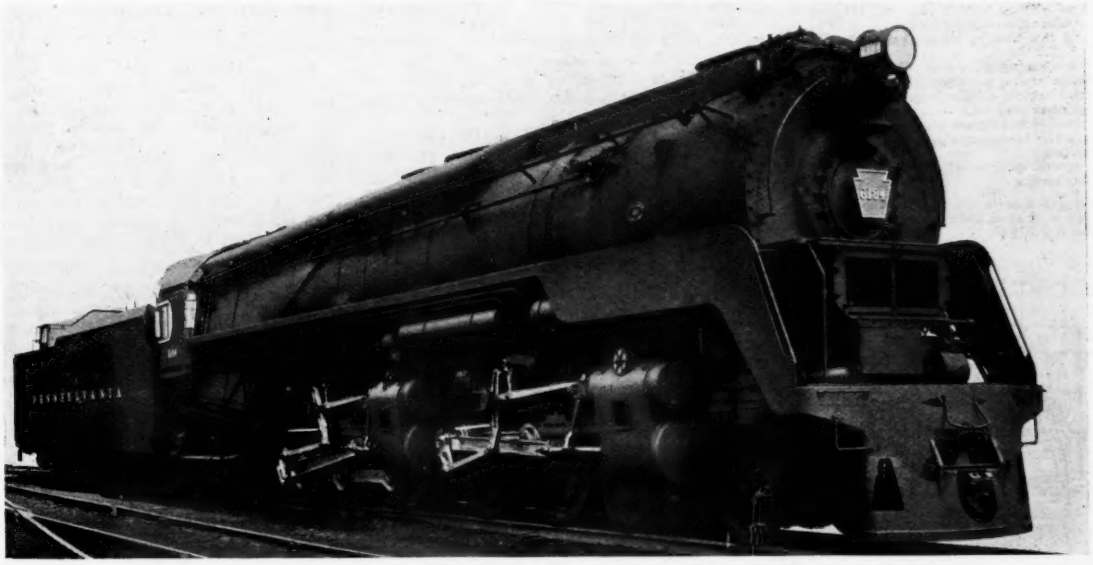
During the last few years further attention has been given to the provision of more powerful engines required to meet present-day needs, involving the operation of heavy freight trains at high sustained speeds, with the result that the large locomotives forming the principal subject of this article have been constructed at Altoona, Pa. Their design was prepared under the direction of the late Mr. H. W. Jones, Chief of Motive Power, and is well shown by the photograph reproduced below, supplied by Mr. H. T. Cover, the present Chief of Motive Power, Pennsylvania Railroad. When considering the development of high-power locomotives both for fast passenger and freight train requirements, the motive-power authorities have given much attention to the possibilities offered by the four-cylinder rigid-frame design as distinct from the articulated Mallet type much used in the United States, especially for freight services.

It may be recalled that in 1939 a large passenger engine was completed at Altoona from the joint designs of the leading locomotive building firms in the U.S.A., the American Locomotive Company, the Baldwin Locomotive Works, the Lima Locomotive Works Inc., and the mechanical executive of the railway. This locomotive, fully described in *The Railway Gazette* of September 27, 1940, was notable in having four outside cylinders, each pair driving independently two sets of four coupled wheels, and for its 6-4-4-6 wheel arangement. Particulars of its performance were given in *The Railway Gazette* of September 3, 1943. After the building of this locomotive, another design was put in hand at Altoona, this time for freight service, and known as class "Q1." At about the same time the Baldwin Locomotive Works was undertaking the further development of the four-cylinder type, similar in basic design to the Pennsylvania experimental 6-4-4-6 locomotive, which resulted in the completion during the early part of 1942 of two large high-speed passenger engines for the Pennsylvania of the 4-4-4-4 type with four cylinders, each pair driving independently two four-coupled sets of 80-in. driving wheels. These are classified "T1" and formed the subject of an article in *The Railway Gazette* of April 5 last. Another 50 of this design are now being built, 25 at Altoona and 25 by Baldwin.

The new class "Q2" locomotives differ materially from the class "Q1" design. They are larger and, as the illustration shows, have the cylinders placed ahead of the coupled wheels which they drive, whereas the "Q1," has one leading pair in the normal position, but the rear pair is outside on each side of the firebox. Thus, the cylinder arrangement follows that used by the Baltimore & Ohio Railroad for an experimental passenger engine built some years ago at the Mount Clare shops. By placing the rear pair of cylinders as described, the wheelbase is somewhat shorter, as space is saved between the trailing and leading wheels of the leading and rear sets of coupled wheels. On the other hand, difficulties arise with the arrangement of the steam and exhaust connections to the rear cylinders and also in the design of the crosshead guide supports. The size of the firebox is restricted also, particularly in depth. Only one class "Q1" engine has been built, completed in 1942. The first of the class "Q2" engines was turned out during 1944 and a further 25 were constructed in 1945.

Steam Plant

The boilers of the class "Q2" engines are remarkable for their size and extent of heating surfaces and for the large grate area provided. The heating surface—including the superheater—is 9,655 sq. ft. and the area of the grate is 121·7 sq. ft. The evaporative heating surfaces are made up of 6,725 sq. ft., contributed by the tubes and flues, and 725 sq. ft. by the firebox with combustion chamber and circulator tubes. The total of 6,725 sq. ft. means that the evaporative heating surface grate area ratio is 55·5. These proportions have resulted in an exceptionally high evaporative performance, for, when tested on the Altoona plant, the maximum actual evaporation reached was 137,479 lb. of water per hr., equal to 20·4 lb. per sq. ft. of evaporative heating surface per hr. The firebox has a long combustion chamber, and provision is made for lengthways expansion and contraction by the insertion of a corrugation to the connecting sheet between the firebox proper and the combustion chamber. This corrugation extends for



General view of the Pennsylvania Railroad 4-4-6-4 class "Q2" locomotive

about three-quarters of the circumference of the combustion chamber. In conformity with Pennsylvania practice, the firebox is of the modified Belpaire pattern. The inner firebox is of welded construction and all seams in the shell construction are seal welded. Carbon-silicon steel is used for the barrel section, which is made up of three rings. Six Security circulators are fitted in the firebox, in place of the more usual arch tubes, and three in the combustion chamber.

A typical arrangement is shown in Fig. 1. The tubes, of solid-drawn steel about 5 in .dia. for the transverse tubes and 7 in. for the vertical tubes, are welded into the crown and side plates. The superheater is of the single loop E type. Boiler working steam pressure is 300 lb. per sq. in. Feed water is supplied by a size 6½ S.A. Worthington feed water heater of 14,400 U.S. gal. capacity, and, in addition, there is a Sellers injector which can deliver at the hourly rate of 15,500 gal. Firing is by a standard type H.T. stoker and a Franklin Butterfly type firedoor is fitted.

With regard to the evaporative performance already mentioned, the boiler efficiency recorded was 49·5 per cent. and the smokebox gas temperature did not exceed 655° F., which indicates a very satisfactory absorption efficiency. The principal dimensions and proportions of these large boilers are given in Table I.

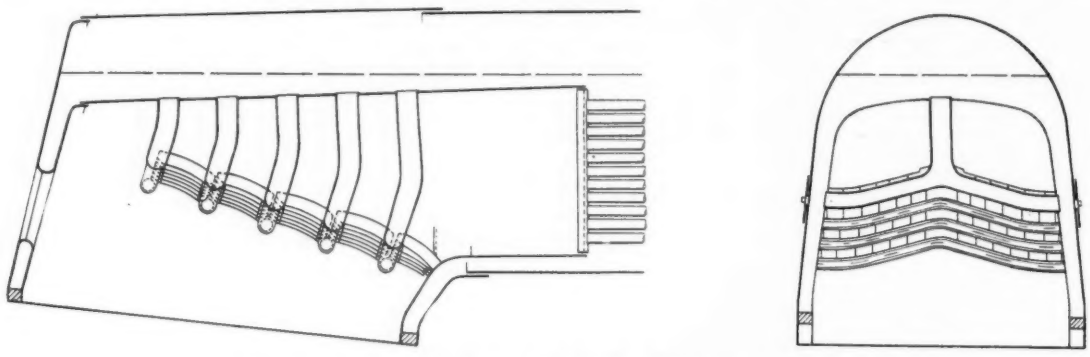


Fig. 1—Typical installation of Security circulators in firebox

TABLE I—PENNSYLVANIA RAILROAD. FREIGHT LOCOMOTIVES. CLASS "Q2" DIMENSIONS AND PROPORTIONS OF THE BOILER

Working steam pressure	300 lb. per sq. in.
Boiler first course	Conical
Dia. first course, outside, front ...	97⅛ in.
,, second course, inside	102 in.
,, ,, ,, outside ...	104 in.
,, third ,, inside	104 in.
,, ,, ,, outside ...	106 in.
Firebox length	162 in.
,, width	108⅛ in.
Tubes, dia. ... ... (51)	2¼ in.
Flues, dia. ... ... (277)	3½ in.
Elements, dia. ... ... (237)	1⅜ in.
Length between tube plates	250½ in.
Net gas area* through tubes and flues	13·02 sq. ft.
Heating surfaces :	
Tubes and flues	6,000 sq. ft.
Firebox, combustion chamber, circulators	725 sq. ft.
Evaporative, total	6,725 sq. ft.
Superheater (inside)	2,930 sq. ft.
Combined	9,655 sq. ft.
Grate area	121·7 sq. ft.
Firebox heating surface/grate area ...	5·77 sq. ft.
Tube and flue heating surface/grate area	49·2 sq. ft.
Superheater surface/grate area ...	21·9 sq. ft.
Evaporative heating surface/grate area	55·0 sq. ft.
Combined heating surface/grate area	76·2 sq. ft.
Gas area/grate area	0·107
Rated tractive force/grate area ...	828 sq. ft.
Rated tractive force/evaporative heating surface	15 sq. ft.
R.T.F. × dia. of drivers/Evaporative heating surface	1,036 sq. ft.

* Net gas area is the area of the tube and flue openings in firebox tube plate. Inside diameter of elements is 0·829 in.

Cylinders, Motion, and Frames

A leading four-wheel bogie is followed by a group of four-coupled wheels driven by the leading pair of cylinders. The rear cylinders drive a group of six-coupled wheels and there is a further four-wheel bogie to support the firebox. The wheel arrangement, therefore, is 4-4-6-4. The leading cylinders are 19¾ in. × 28 in. and the rear pair driving the six coupled unit 23½ in. × 29 in. Walschaerts motion, controlled by an Alco power reverse gear, imparts a full gear travel of 8 in. to 12 in. and 14 in. valves for the front and rear cylinders respectively.

Valves and pistons are lubricated by Detroit mechanical lubricators. The driving wheels have Boxpok centres and are 69 in. dia. and the coupled wheelbase is 26 ft. 4½ in. The main throttle is of the multi-valve pattern housed in the superheater header. There are two blast pipes exhausting through a double chimney. An interesting device fitted is an automatic control to arrest the slipping of either set of driving wheels and for restoring power to the slipping engine as soon as it has slowed down to the speed of the non-slipping engine. This is accomplished by butterfly valves in each of the four steam pipes, operated by a differential electric switch which admits air to the cylinders operating the valves of the slipping engine only. This switch is driven by small wheels running on the treads of the No. 2 and No. 3 driving wheels. When slipping is arrested, the air supply is shut off and the steam pressure in the steam pipes opens the butterfly valves to restore the steam supply to the engines. In order that the engine may negotiate curves in the track in a satisfactory manner, a certain amount of side play is allowed for the coupled axles, which is provided as follows:—

The rear pair of wheels in each unit, which are the main drivers, are each allowed ½ in. total lateral displacement. The leading wheels of the front unit and the leading pair of the rear unit are given 2½ in. and ½ in. lateral movement respectively, and, in addition, the latter have blind tyres. The centre pair of wheels of the hind unit has 1⅜ in. total lateral play. The Alco lateral motion controlling device is fitted for all the coupled axles.

The connecting and coupling rods are fitted with floating bushes for all crank pins, and provision is made to accommodate the lateral movement allowed the axles described by the application of spherical bushings at No. 4 wheels; the centre pair of the rear unit, and the coupling rod pin bearings for wheels 1, 2, 3, and 5, have a radius on the outer bushings. The main engine

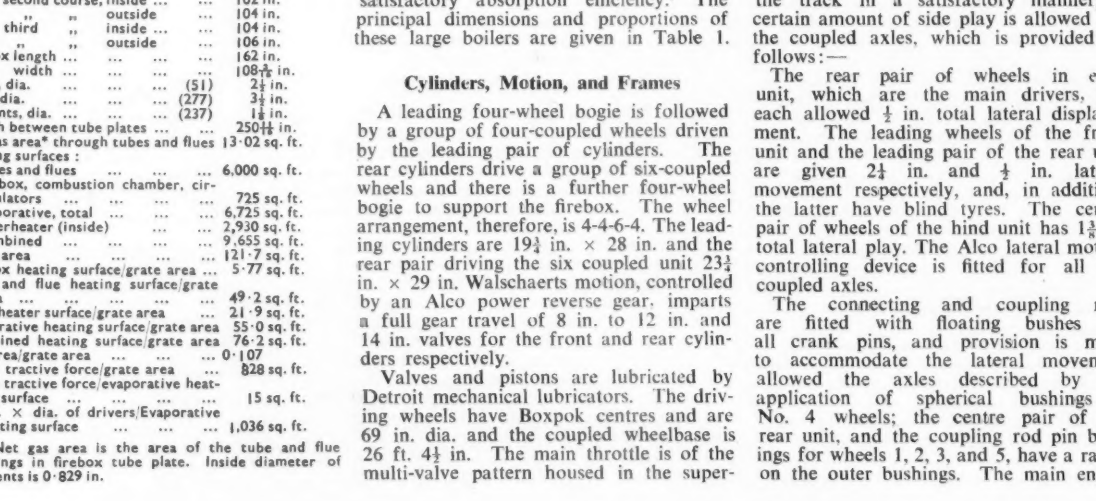


Fig. 2—Diagram showing principal dimensions of boiler

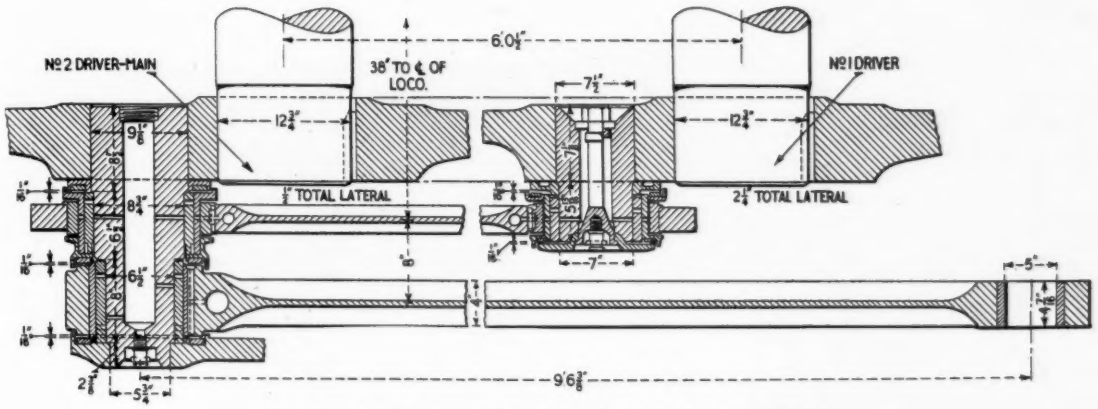


Fig. 3—Arrangement of main and side rods, front engine

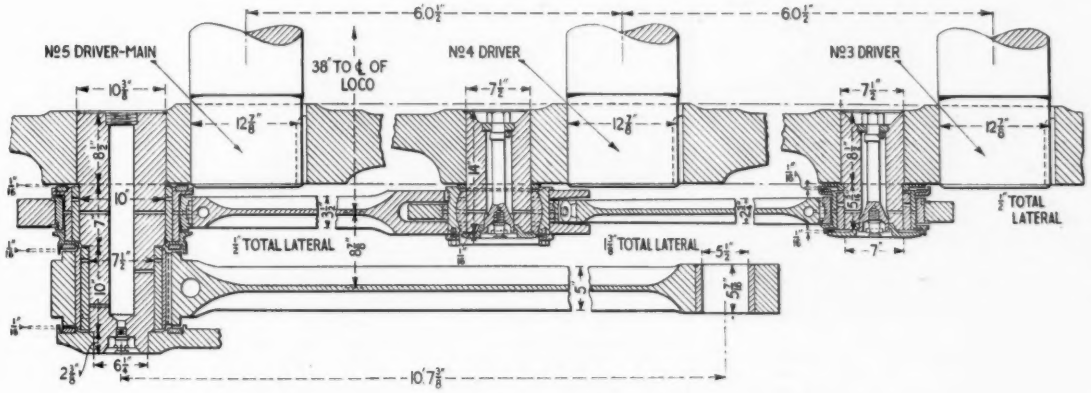


Fig. 4—Arrangement of main and side rods, rear engine

framing is a cast-steel bed frame which embodies the crossties and the cylinders complete with hind covers. The rear cylinder connection with the main frames is designed so that the distance between the rear drivers of the front unit and the leading pair of wheels of the rear unit may be as short as possible, thus reducing the total wheelbase of the coupled wheels. The spring suspension is such that the leading bogie is equalised with the drivers of the front engine and the rear engine drivers are equalised with the trailing bogie. The leading and trailing bogie wheels are 36 in. and 44 in. dia. respectively. All driving, leading, and trailing bogies and tender axles are equipped with Timken roller bearing journal boxes.

Rated tractive force, main cylinders only, is 100,800 lb.; therefore, as the weight on the coupled axles is 393,000 lb., the adhesive factor is 3·9. The Franklin booster driving the rear pair of wheels of the trailing truck adds a further 15,000 lb., thus making a total tractive force available at starting and low speeds of 115,800 lb. When tested on the plant, one of these engines developed a maximum of 7,987 i.h.p. at 240 revolutions per min. equal to 57 m.p.h. This is a high-power output, the significance of which will be apparent when it is realised that this means 1·18 i.h.p. per sq. ft. of evaporative heating surface, or only 0·84 sq. ft. of heating surface per i.h.p. developed. Further, on an engine weight basis, it means that the weight required per i.h.p. was only 77·5 lb., compared with 83·7 lb. for the class "M1a" design.

The tender is of the rectangular pattern with eight-wheel bogies of Pennsylvania design. The frames for these and the water bottom underframes were made by the General Steel Castings Corporation, which also supplied the main frames for the engines. There is coal space for 39·87 short tons and the tank capacity is sufficient for 19,020 U.S. gal. The engine and tender are fitted with Westinghouse brake equipment, for which two 8½ in. cross-compound compressors are fixed on brackets at the front of the engine.

The engine weight is 619,100 lb. or 276·3 long tons; added to which, the loaded weight of the tender of 430,000 lb., or 191·9 long tons, makes the weight of the locomotive 468·3 long tons. For the boiler and motion drawings, the writer is indebted to Mr. C. B. Peck, of *The Railway Mechanical Engineer*, New York.

TABLE II—PENNSYLVANIA RAILROAD. FREIGHT LOCOMOTIVES. CLASS "Q2" GENERAL DIMENSIONS

Cylinders, dia. × stroke—		
	Front (2)	19¾ × 28 in.
	Rear (2)	23¾ in. × 29 in.
Valves, piston, dia	Front ...	12 in.
	Rear ...	14 in.
Coupled wheels, dia.		69 in.
Tractive effort at 85 per cent. B.P.		
Main cyls.		100,800 lb.
Booster		15,000 lb.
Height to top of chimney ...		16 ft. 5½ in.
Wheel-base, driving		26 ft. 4½ in.
Wheel-base, rigid		20 ft. 4 in.
Wheel-base, engine, total ...		53 ft. 5½ in.
Wheel-base, engine and tender, total		107 ft. 7½ in.
Water capacity		19,020 gal. (U.S.)
Coal capacity		39·87 short tons
Tender bogies		8-wheel
Weights in working order—		
On front truck		42·88 tons
On drivers		175·44 tons
On rear truck		58·06 tons
Engine, total		276·38 tons
Tender, loaded		191·96 tons
Total, locomotive		468·34 tons
Weight on driving wheels, per cent. of total		63·5
Adhesive factor		3·9

SIR WILLIAM CHAMBERLAIN MEMORIAL.—The trust deed setting up the Sir William Chamberlain Memorial Scholarships and Grants and a cheque for £5,000 were handed to Mr. R. Stuart Pilcher, President of the Institute of Transport, at a recent meeting of the North Western Section of the Institute at Manchester, by Mr. E. F. Topham, Chairman of the appeal committee. Mr. Topham paid a deep tribute to the outstanding qualities of the late Sir William Chamberlain, and, after the presentation ceremony, further sincere tributes were made by Messrs. D. Halliwell, J. E. Woodford, H. Allen, and E. H. Edwardes.

NEW SERVICE TO SWITZERLAND BY L.N.E.R.—The L.N.E.R. restored a through service from London to Switzerland *via* Harwich and the Hook of Holland on December 16. This service, which has been suspended since 1939, operates daily, Sundays excepted, from Liverpool Street Station at 8 p.m.

XUM

A Military Light Railway in East Africa

Narrow-gauge line constructed to serve large ammunition depot

DURING the war, for the needs of the Japanese campaign, a huge ammunition storage depot costing £250,000 was laid out in an area of 15 sq. miles in Kenya. The Kenya & Uganda Railway ran branches from Gil-Gil on the main line into two sub-depots, but there was no conveyance from railhead to the magazines, which were spread in groups over the whole area and then sub-divided into sub-depots.

It was decided, therefore, to construct a light railway, and early in 1943 an R.E. Railway Operating Company was formed under the command of Captain C. W. L. Mason, in civil life a locomotive draughtsman with Associated Locomotive Equipment Limited.

Work of Construction

The unit, composed of British N.C.Os., Italian P.O.W., and men of the East African Engineers, immediately began the building of locomotive repair, machine, blacksmith's, and carriage and wagon repair shops, and a power house, all to the design of Captain Mason. The track, 60-cm. gauge, was shipped from Italian Somaliland with 12 Orrenstein & Koppel 0-4-0 diesel locomotives, used there by Italian road-making contractors, and 160 wagons. The stock mostly was salvaged from the sea.

By July, ten miles of track, including turnouts and spurs, assembled in prefabricated sections, had been laid and six locomotives reconditioned for service. In mid-1944 the layout was complete—18½ miles of line, ballasted with hard stone chips obtainable in the depot from an escarpment face and crushed by machinery, and with accurately surveyed gradients.

Each locomotive was inspected monthly and overhauled completely once in three months. Africans received thorough training as drivers, brakesmen, shunters, turners, and permanent way inspectors' assistants.

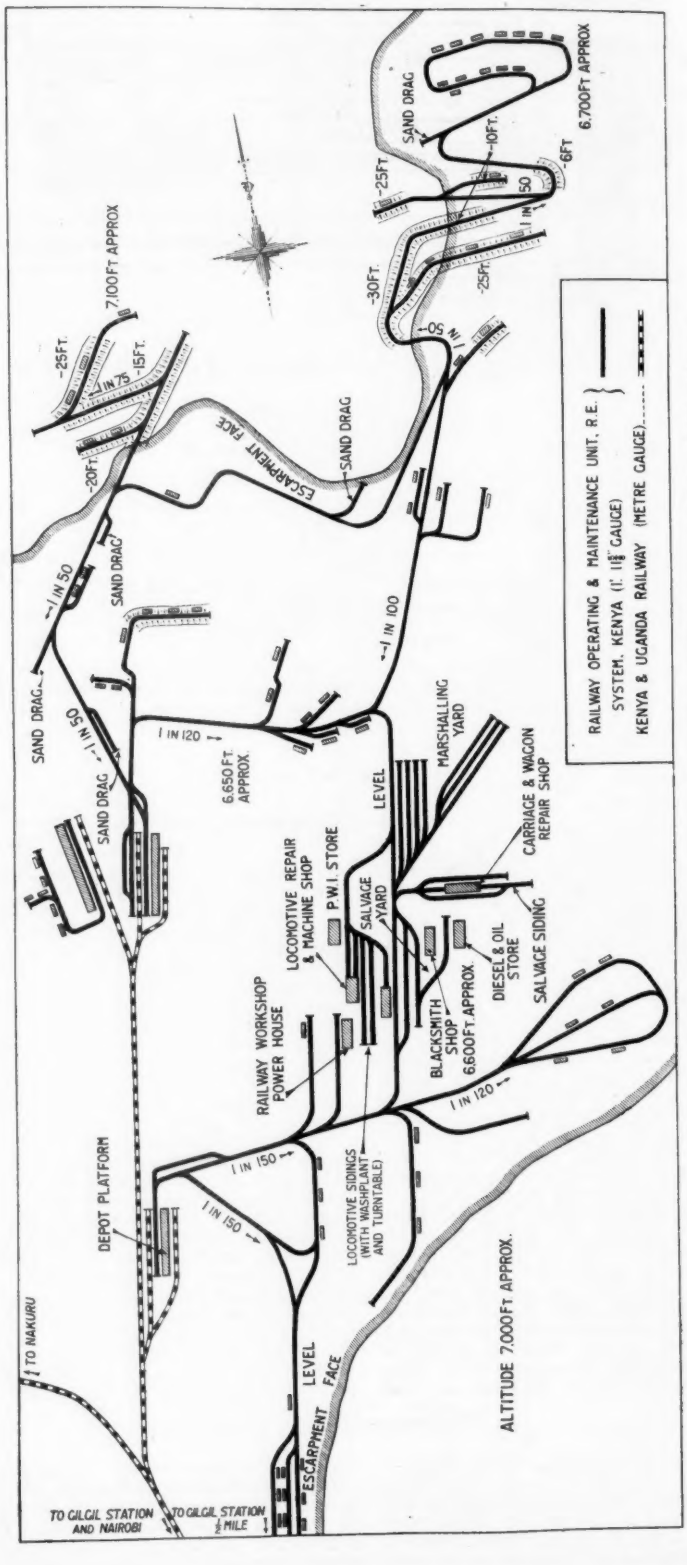
The whole staff had to learn Swahili, the standard African language laid down by East Africa Command, and special classes were instituted.

Salvage for Repairs

The Railway Operating Company had no spare parts available and no stores on which to draw. All repair work had to be carried out by using scrap or salvaged metal. Nevertheless, failures were rare; by careful nursing over steep gradients with 30-ton trains, consisting of ten "flats," fuel consumption of the locomotives averaged only 0.438 gal. an hour. The hourly cost of train operation worked out at only 2s. 3½d., compared with £1 15s. for conveyance of the traffic by 3-ton lorry.

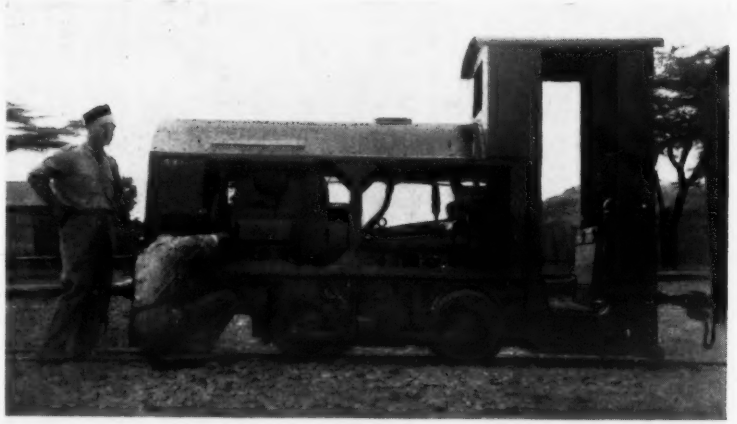
On steep inclines, sand drags were provided, and points were held automatically by a weight operating through pulleys and wire secured to the point-blade. A turntable, made of scrap metal, was constructed to the design of one of the British N.C.Os.

The locomotive stock, all 0-4-0 diesel machines, eventually numbered 15: four Orrenstein & Koppel 35 h.p. 2 cyl.; eight Orrenstein & Koppel 25 h.p. 1 cyl.; and three Hunslet-built with Ailsa-Craig

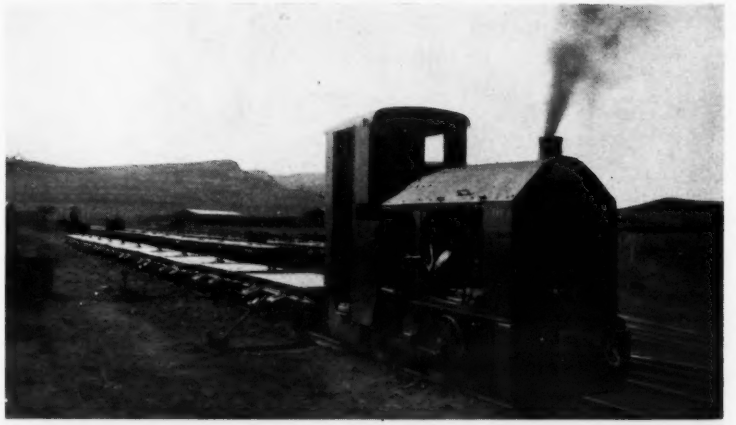


Map showing layout of system of Railway Operating & Maintenance Unit, R.E., Kenya

A Military Light Railway in East Africa



Orrenstein & Koppel 35-h.p. 0-4-0 diesel locomotive used on the R.E. railway in Kenya



Locomotive hauling a normal train set of ten "flats" to carry a load of 3 tons each

Prefabricated lengths of railway track being off-loaded from the diesel train set

Sand drag on steep incline; points held automatically by weights and wire secured to blade

engines. In addition, there was an Alfa-Romeo Deutz type 1 cyl. 0-4-0, used only for track inspection.

For the use of visiting officers, Captain Mason designed an 8-seater passenger coach. Dubbed the "Blue Coach," it was constructed of salvaged materials and upholstered comfortably in red and blue, the R.E. colours. The two bogies were made from "skip" wagon frames, and proper springing was provided. The bodywork was made of broken army furniture.

Although Captain Mason returned to the United Kingdom for demobilisation in January last, the railway which he constructed, and which was described by the Chief Engineer's Office of East Africa Command as "a remarkable effort in practical railway engineering," continues to perform its useful function.

PATENTS: "LICENCES OF RIGHT."—Notice has been given that the indorsements "Licences of Right" on the following patents were cancelled on November 8, 1946:—

No. 507,237, in respect of automatic electric regulators for controlling the excitation of dynamo electric machines (grantee: English Electric Co. Ltd.).

No. 519,887, in respect of control gear for electrically-propelled vehicles (grantee: English Electric Co. Ltd.).

General layout of marshalling yard

Power-Driven Hand Tools for the Civil Engineer's Department—9*

Preparation of plates for welding

ALTHOUGH the gas cutting machine illustrated is automatic in operation, it is fully portable, and, therefore, was included in the exhibition arranged some time ago by the L.N.E.R. of tools for the civil engineer's department that can be taken to the job whatever its location. This Type "2790" portable straight line and circle cutting machine of The British Oxygen Co. Ltd., has been used widely for a long period for cutting steel plates to shape, and for trimming and bevelling plate edges in preparation for welding.

Improvements have been made from time to time, and the latest version of the machine has two cutting heads, so that a plate can be finished with a single bevel and nose or a double-bevelled edge, or two adjacent plate edges can be cut simultaneously. At the same time, a horizontal roller guide has been introduced, enabling curves to be cut by following a steel or wooden template.

The machine is driven by a small reversible electric motor, for operation on d.c. or single-phase a.c. supplies of standard voltages between 200 and 250. It will run either directly on the surface of the plate, or on a 10-in. track, which may be 10-in. R.S. channel, joist, or a specially machined track. A variable speed control, a speedometer, start-stop push-buttons, and a reversing switch are located conveniently for the operator. A nameplate attached to the top of the machine shows the cutting speeds and oxygen pressures for various thicknesses of plate.

Two adjustable head-type cutters are fitted, capable of adjustment for cutting bevels up to 45 deg. The operations which can be carried out are as follow: (1) simultaneous trimming or cutting of two adjacent plate edges; (2) cutting of single bevel, and nose edge preparation; and (3) cutting of double bevel edge preparation. Operations (2) and (3) should be carried out only when the plate being cut is perfectly flat. A separate plate edge preparation machine, Type "2800," is recommended for work on undulating plates.

The Type "2790" machine will cut steel plate up to 4 in. thick. Straight-line cuts may be of any length. Circles can be cut of any diameter from 12 in. upwards, and curves of not less than 3-ft. curvature. Both cutters have vertical and transverse adjustment. The machine is capable of operating with acetylene, coal gas, or certain other fuel gases. It is supplied with six gas tubes connecting the two cutters to a gas distributor on the body. The three main gas tubes are connected to the distributor by standard union nuts, and are supplied in lengths to suit requirements.

* Previous articles in this series have appeared in our issues of April 12, April 26, May 17, June 7, June 28, August 2, September 27, and November 1

Iron and Steel Production.—The table below shows pig iron and steel production in the United Kingdom in November last with comparative figures:—

PIG IRON (000's OF TONS)

Period	1945 Weekly average	1945 Annual rate	1946 Weekly average	1946 Annual rate
1st quarter ...	135	6,992	146	7,566
2nd quarter ...	133	6,894	151	7,827
3rd quarter ...	133	6,893	147	7,622
October ...	146	7,598	156	8,102
November ...	150	7,801	154	7,903

STEEL INGOTS AND CASTINGS (000's OF TONS)

	1945 Weekly average	1945 Annual rate	1946 Weekly average	1946 Annual rate
1st quarter ...	233	12,126	243	12,617
2nd quarter ...	227	11,814	252	13,111
3rd quarter ...	211	10,988	230	11,953
October ...	243	12,648	254	13,226
November ...	248	12,870	264	13,715

RAILWAY NEWS SECTION

PERSONAL

His many friends will join with us in extending good wishes to Sir Sam Fay, General Manager of the Great Central Railway, 1902-22, who attains his 90th birthday on December 30.

Mr. H. N. S. Fearon, Chief Inspecting Engineer, Sudan Government London Office, is retiring on December 31, and will be succeeded by Mr. W. B. G. Swayne. Mr. Fearon's services are being retained by the Sudan Government in an advisory capacity.

Mr. W. E. Bulman recently was appointed Chief Mechanical Engineer, Tanganyika Railways & Ports Services, in succession to Mr. Gordon Gibson, lately appointed Deputy Chief Mechanical Engineer, Kenya & Uganda Railways & Harbours. Mr. Bulman has just completed a visit to Canada and the U.S.A., and is at present in England.

Mr. S. T. Burgoyne is retiring from the post of Passenger Manager, North-Eastern Area, L.N.E.R., at the end of the year.

We regret to record the death on December 16 of Mr. Godfrey Knight, who was Secretary of the Southern Railway Company, 1923-30.

Mr. John Ratter, hitherto Permanent Way Assistant to Engineer (London), L.N.E.R., has been appointed Civil Engineer (Maintenance), Department of the Chief Engineer, L.P.T.B., from January 1.

INSTITUTION OF CIVIL ENGINEERS AWARDS

Among awards made by the Institution of Civil Engineers for papers discussed or published without oral discussion during the session 1945-46 are:—

Baker Gold Medal: To Mr. G. L. Groves, B.Sc.(Eng.), M.Inst.C.E., in recognition of his work in connection with the Ilford Tube.

A Trevithick Premium: To Mr. A. H. Toms, B.Sc.(Eng.), A.M.Inst.C.E., for his paper on "Repairs to Railway Viaduct over London Road, Brighton, after Damage by Enemy Action in May, 1943."

An Indian Premium: To Sir Claude Inglis, C.I.E., B.A., B.A.I., M.Inst.C.E., for his paper on "Training Works Constructed in the Rupnarain River in Bengal—after Model Experiments—to Prevent Further Bank Erosion endangering the Bengal-Nagpur Railway Line Linking Calcutta with Bombay and Madras."

LORD ASHFIELD'S CHRISTMAS MESSAGE

Lord Ashfield, Chairman of the London Passenger Transport Board, in the course of a message of Christmas greetings to the staff published in *Pennyfare*, states that during the past year every possible endeavour has been made to restore and improve the Board's services and that all may take legitimate pride in their achievements. "That much progress has been made despite almost insuperable difficulties," Lord Ashfield continues, "is due to the loyalty and teamwork of everyone, from the highest to the lowest, and to you all I extend my gratitude and thanks. Major tasks lie ahead, which will demand of us all concerted efforts, no less unstinting than in the past, if we are to discharge efficiently our heavy responsibilities and to attain that better life with its increased comfort and amenities to which we all, without exception, aspire."

Mr. J. E. S. Bodger, M.Inst.C.E., M.Inst.T., Deputy General Manager, Ceylon Government Railway, who took over

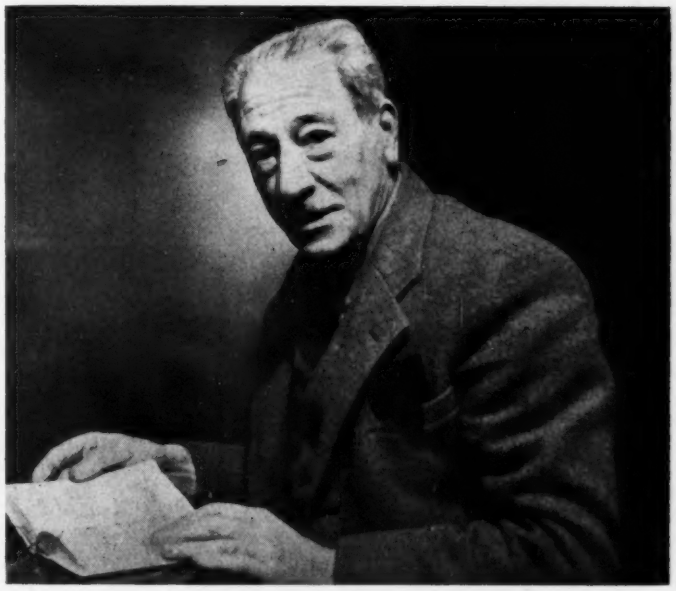
Mr. J. E. S. Bodger

Appointed General Manager, Ceylon Government Railway

the position of Acting General Manager when Mr. W. G. Hills (who died in November, 1945) proceeded on leave, preparatory to retirement, in October, 1945, has been appointed General Manager. Mr. Bodger began his career as a pupil at Peterborough on the Great Northern Railway. He became an Assistant to the District Engineer, Leeds, and from that position joined the Army in 1915; he served in a pioneer battalion in France, Macedonia, and Palestine, on field engineering work, which included light railways, roads and water supplies. Mr. Bodger was mentioned in dispatches in 1918. In 1919 he was demobilised and returned to the District Engineer's Office, Leeds, G.N.R., where he remained until 1921, when he joined the Ceylon Railway Extensions Department as an Assistant Engineer to work on the construction of the Trincomalee Railway. He transferred to the Way & Works Department, Ceylon Government Railway, as an Assistant District Engineer in 1924, and was promoted District Engineer in the next year. He served in various departments, and in 1933 was appointed Assistant Engineer, Way & Works Department; he officiated as Signal Engineer, Way & Works Department, from 1932 to 1934. In 1934 he was appointed Deputy Engineer, and during the greater part of 1936, while Mr. G. E. Samuels was on leave, and in 1937, when Mr. Samuels was acting as General Manager, Mr. Bodger acted as Engineer, Way & Works. He was confirmed in that position on the retirement of Mr. Samuels in May, 1939. Mr. Bodger later acted for a period as General Manager in addition to his own duties, while Mr. W. G. Hills was ill. Subsequently Mr. Bodger acted as Deputy General Manager, in which position he was confirmed in 1942.

The President of the Board of Trade announced in the House of Commons recently that Mr. C. G. Renold (Chairman of the Renold & Coventry Chain Co. Ltd.) had accepted an invitation to be the first Chairman of the British Institute of Management.

Mr. H. N. S. Fearon, O.B.E., Chief Inspecting Engineer, Sudan Government London Office, who, as recorded elsewhere on this page, is retiring on December 31, but whose services are being retained by the Sudan Government in an advisory capacity, was born in 1881, and was educated at St. Paul's. He was



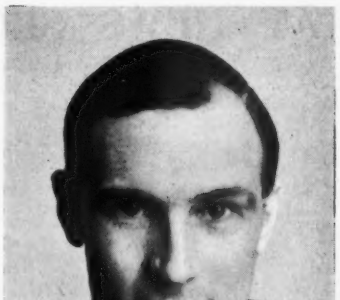
Mr. H. N. S. Fearon

Chief Inspecting Engineer, Sudan Government London Office, 1932-46, whose services are retained in an advisory capacity

articled for three years to Mr. G. W. Usill, civil engineer, Westminster, and afterwards spent two years in the shops of an engineering works. He joined the Joint Purchasing Agency of the Egyptian and Sudan Governments' London Office in 1906 as a Junior Assistant Engineer, and was employed on various inspection duties in the United Kingdom and on the Continent until 1914. He was detained in Austria as civilian prisoner of war, 1914-18. In 1919 Mr. Fearon was appointed Chief Assistant Inspector. On the separation of the Egyptian and Sudan London Offices in 1924, Mr. Fearon joined the Sudan Government Office as Assistant to the Chief Inspecting Engineer; and he was himself appointed to the last-named post in 1932.

Mr. H. B. Moss, who was District Manager in Buenos Aires for the Dunlop Rubber Co. Ltd., before the war, is returning to Argentina as Sales Manager (Allied Products) of the Dunlop Pneumatic Tyre Co. (S.A.), Limited. Mr. Moss was recently demobilised from the R.E.M.E. after service in Egypt, Palestine, the Sudan and Eritrea.

Mr. B. M. Strouts, M.B.E., Assistant District Superintendent, Manchester, L.N.E.R., who, as recorded in our November 8 issue, has been appointed Assistant to Passenger Manager (General), Southern Area, was educated at Aldenham and at St. John's College, Cambridge, and joined the L.N.E.R. as a traffic apprentice in 1931. In 1935 he was appointed Assistant to the Industrial Agent, and a year later went to India as Joint Secretary to the Indian Railway Inquiry Committee under the Chairmanship of Sir Ralph Wedgwood. Mr. Strouts returned to the Chief General Manager's



Mr. B. M. Strouts

Appointed Assistant to Passenger Manager (General), Southern Area, L.N.E.R.

Office in 1937, and remained there until appointed Assistant to the District Goods Manager, Kings Cross, in 1938. As a member of the Supplementary Reserve he was called up in 1939, and he served with a railway operating company in the B.E.F. and in Persia, and on the staff of G.H.Q., Middle East. He returned home in 1943 and formed a railway operating group; later he was transferred to S.H.A.E.F. and served on the staff of the Director-General of Military Railways, and as Liaison Officer with the Netherlands Railways. In 1945 he was appointed Deputy-Director of Railways, Cologne, and placed in charge of the Cologne Division of the Reichsbahn with the rank of Colonel. He was mentioned in despatches and awarded the M.B.E. After demobilisation, Mr. Strouts took up the position of Assistant District Superintendent, Manchester, in January, 1946.

Mr. D. Salameh, General Manager for Palestine, Thos. Cook & Son, Limited, is retiring on January 31 next. The Palestine area will come under the jurisdiction of Mr. W. Jackson as territorial General Manager for the Middle East & East Africa. Mr. Salameh joined the staff of Thos. Cook & Son, Limited, at Jerusalem in 1890, and in 1892 went to its head office in London for six months. He returned to Jerusalem, and became Assistant Manager in 1903, and Manager in 1921.

RAILWAY RATES TRIBUNAL

Mr. E. F. M. Maxwell, Barrister, has been appointed Registrar of the Court of the Railway Rates Tribunal.

The late Mr. H. Farror, formerly Assistant Solicitor (Common Law) Southern Railway, who retired in 1929, left £6,099.

We regret to record the death on December 16, at the age of 67, of Mr. Gottlieb Wüthrich, M.I.E.E., General Manager & Chief Engineer, Oerlikon Limited, London.

Mr. Robert Walsh has been appointed Head of the new Automotive & Export Department established at its Wilmington, Delaware, plant by the American Car & Foundry Company.

Electric Safety Fence in Western Australia

Electric safety fence on the new diversion round Swan View Tunnel, Western Australia, described in an editorial note on page 706

Transport Bill Second Reading Debate

Ministry of Transport rejects demand for public inquiry

In the House of Commons on Monday, December 16, the Minister of Transport, Mr. Alfred Barnes, opened a three-day debate on the second reading of the Transport Bill.

Mr. Barnes said that the Bill was the largest and most extensive socialisation measure ever presented to a free democratic Parliament. No one would dispute that the financial transaction involved was very considerable. Immediately, a sum of £1,065 million was involved in the taking over of the railway companies and canals, and the London Passenger Transport Board. The organisational and administrative task which the Commissioners would have to undertake would be very formidable, but fortunately there would be no break in continuity in this respect.

During the war, individuals in charge of large organisational efforts had undertaken and conducted much bigger tasks than was envisaged in this measure. He recognised that to perform such duties and obligations was sometimes easier in time of war than under peacetime conditions, because in wartime there was a general desire to co-operate, whereas under peacetime conditions, that co-operation was not always forthcoming. Nevertheless, the experience that had been gained during the war, particularly at the Ministry of Transport, would come in very useful in the task that lay ahead.

Demand for Inquiry

There was a widespread demand from the interests affected, particularly the railway companies and the road haulage organisations, that an inquiry should precede a measure of this character. He had no hesitation in rejecting this request when he considered the inquiries that had already taken place into this problem of the unification of transport between the two wars. There had been some five major Acts of Parliament dealing in some respect or another with this problem, and there had been about 20 important inquiries. He doubted whether the nation appreciated the legacy which the war had left in regard to transport. Transport services had been worked unmercifully under wartime conditions, with consequent deterioration of the rolling stock of the railways, and that applied to goods and passenger services by road as well. The whole of the rolling stock of transport had not been kept up to scratch and was not in the position of being replaced easily. Many ports had been very severely damaged by enemy action. The result was that the nation was facing very large sums of capital expenditure if transport services were to be brought up to any standard of efficiency.

Faced as the nation was with the necessity to use its capital resources wisely, with the difficulties of materials and manpower, we could not afford to allow unequal, varied, separate ownerships to compete for the capital resources that were needed.

The London & North Eastern Railway was an illustration. It served an area of heavy industries. It was handicapped by the severe depression which affected the whole coastal traffic after the last war. Its circumstances, therefore, were not so favourable as those of some of the other railways.

All railway undertakings in between the war periods suffered in consequence of a new and intensive development of road transport, but the London & North Eastern Railway suffered probably more than the others, with the result that the necessary capital was not expended on keeping its capital equipment up to date.

Then had come the war, and while all railway companies, with other transport undertakings, had to take the strain, the London & North Eastern—again because of the heavy goods traffic on its line and the fact that practically the majority of the airfields had been strewn along the coast—had to carry a strain almost beyond its capacity to endure. There had been no let-up after the war, and with the revival of industry, the heavy traffics were most acute on that line, with the result that its locomotives, on an average, were over 32 years old. That applied also to wagons and other elements in the rolling stock; and at a time when it was vital that transport should render an efficient service to British industry, it was necessary to impose widespread restrictions on all kinds of commercial traffic in an area of that character.

Direction of Capital

Capital had to go where it was most needed, and where it would best serve our national resources. Transport was not, of itself, a productive service. It was an overhead cost on the whole of British trade and industry. Parliament, in looking at transport, should look at it as a major overhead cost, and its organisation should be directed entirely from that angle.

Of the 18 million persons employed in British industry, 1¼ million were affected by this Bill. They were not immediately affected, but something like 750,000 persons would pass immediately into the service of the British Transport Commission.

What was proposed was not out of line with transport experience throughout the world. In Canada, 55 per cent. of the railway mileage was already State owned. In Australia and New Zealand 95 per cent. was publicly owned. In the Union of South Africa, 81 per cent. was State owned. In Great Britain, so far, 100 per cent. was privately owned. Throughout the world 45 per cent. of the rail transport was already publicly owned or State owned.

The real issue before the House was whether the measure was a workable scheme. In the various stages of the debates, and in Committee, he would welcome any constructive criticism or advice that could be given.

The first 11 clauses of the Bill dealt with the powers and duties of the British Transport Commission. He could not emphasise too much the importance which he placed on this instrument of the Commission to effect the process of unification. There were two specific limitations on its powers. It would not be able to manufacture chassis for road vehicles, and it would not be permitted to build ships, except lighters or barges not exceeding 175 tons. It would certainly be his intention not to depart from the general railway practice, and that those firms engaged in the building and construction of locomotives and wagons for export should share in the Commission's business.

The Commissioners had to carry through the task of integrating all forms of transport covered by the Bill and to see that all parts of the country were adequately served. He expected that for processes of integration and co-ordination, country bus services would be more synchronised with railway services than in the past. The convenience of the travelling public would be met to an extent which had not prevailed hitherto.

As to the capital expenditure on the railways the Commission would have to carry out large-scale capital expenditure in rebuilding railway stations to make them centres of transport.

Taking the distribution of population in this country, the small distances we had to travel compared with many other countries, and the concentration and magnitude of its industries, there were no physical or financial reasons why we should not have the most efficient, comfortable, speedy, and cheap system of transport in the world. The Commission, small, compact, with wide powers, he expected to be sufficiently dynamic in its energies to grapple with problems of that kind. A small body of persons with time to think and plan, and with the vast resources it would have behind it, would work a revolution in the efficiency of the transport system of this country.

The whole of the property would vest in the Commission. The Commission would have complete direction of the national transport finances; it would have complete control over policy, and provision was made for the delegation of management functions from the Commission to its respective Executives. By that process he had completely safeguarded the authority and the supremacy of the Commission.

He had visualised, to commence with, four main executive organisations—one for the railways, one for the ports and harbours and inland waterways, one for road goods and passenger services, and the London Passenger Transport Board, which is taken over with the four main-line railways, will be renamed the London Passenger Transport Executive. The London Passenger Transport Board was the best example between the two wars of the desirability of unification. It took over 14 local authority undertakings and some 70 private undertakings, and was anyone today bold enough to say that, if they had left those 14 local authority and 70 separate undertakings, we should have had the London transport system of the moment? With all its difficulties and deficiencies the London transport system was the best in the world. Its bright stations, its comfortable rolling stock, and its services, represented a fine example of unification.

Major Acquisitions

The railways, the London Passenger Transport Board, and the canals represented the major part of our transport undertakings. In two wars, the strategic value of the railways had been demonstrated clearly to the whole nation, and they could not permit, in any circumstances, any form of competition to undermine the stability and efficiency of the railway system of this country. For that reason, and to make provision for that in the future, resources would be pooled for the purpose of seeing that they were safeguarded.

The main criticism was directed not so much to the principle of nationalisation as to the compensation terms. The Chancellor of the Exchequer would deal fully and exhaustively with this matter.

Briefly, what influenced the Government to come down on this side of the market price for railway passenger traffic, passenger transport, and canal shares was that in the first place it covered adequately the securities that were involved. Sixty-nine

of the quoted securities of Part I of the Fourth Schedule represented 98 per cent. of the nominal value of all the securities involved. Therefore, this method, which was quick and easy in its assessment, covered, to all intents, the whole of the securities affected. The dates represented very favourable quotation dates. Therefore, he felt that they had adopted a simple, easy, and fair method that got equitable compensation and avoided considerable difficulties.

The financial characteristics of the several groups of undertakings or assets to be acquired were more diverse in transport than in coal or cables. The scheme of compensation recognised, on the one hand, the rights of dispossessed owners to reasonable compensation, and, on the other hand, the right of the State to benefit from the use of its own credit. In no circumstances could it be claimed, when the State was taking over a service of this kind, that it had to continue in perpetuity the interest income of the persons involved. A nationalised public service was entitled to have the advantage of public credit.

Basis of Compensation

Compensation was to be satisfied in British Transport Stock issued by the Commission, and backed by a Government guarantee. Its terms were to be such as to make it worth, at the time of issue, the amount of the compensation to be satisfied. This disposed of any suggestion that the terms of compensation imposed loss of capital. Any such loss must have occurred before nationalisation had been announced, because the prices used were in no case less than those ruling shortly before the Election. In the Bill there were two main bases of compensation: (*a*) market valuation of securities, and (*b*) the net value of the assets, *plus* compensation where justified, for losses caused by cessation of the business and severance.

Taking the four main-line railways, and assuming the total compensation on the basis of market prices to be, say, £900 million, it represented about 25 years' purchase of the average pre-war net revenue during the three years, 1935, 1936, and 1937, or 22¼ years' purchase of the net revenue enjoyed under the control agreement—£40 million. If the alternative suggested was arbitration, someone would have to guess what railway earnings might have been in circumstances of competition, in all the uncertainties of the future, and then determine a global sum of compensation, and how to split it up, first, between the individual companies, and, second, between the many classes of stockholders according to their respective and varied rights. I do not believe that, in this case, any arbitrator would have been able to find a better and more fair measure of compensation than is provided by the market assessment of the values of the stock.

The canals had suffered very severely in the different forms of competition which had developed. They had persisted despite railway and road competition. There was a general desire in the country to see our waterways used to their full capacity. Under unification, and under the general directions of the Commission, there was the possibility that all forms of transport —rail, road, and waterway—would have an opportunity of serving the community to the fullest extent of their possibilities.

The privately-owned wagons in this country had been an anachronism on our railways for many years. Over 20 per cent. of them were obsolete and should be scrapped, and 50 per cent. were over 35 years old. If we were to have an efficient transport service for goods on the railways, a considerable capital expenditure had to be faced by the Commission in the replacement of wagon rolling stock.

Road Haulage Monopoly

The road haulage business had been the most controversial problem in rail and road matters since before the war. The rapid expansion of road transport had raised many problems, and had been the subject of many detailed investigations, but what was not always appreciated was that the road haulier enjoyed, to some extent, a monopoly right, and on this problem of transport the objection was not to the existence of monopoly rights provided that a particular person or a particular group or a particular industry enjoyed them.

Under our licensing system of "A" and "B" licences, no new persons, not even ex-Servicemen, could get into the industry unless they proved need, and, if the existing services were sufficient, the citizens of this country were denied their right to run lorries on the road for reward.

It was desirable that, if unification was needed to avoid this ruinous competition, this monopoly should be extended and eventually covered by the State. Any road haulier whose business was predominantly engaged in the transport of goods over 40 miles was brought within the compulsory terms of the Bill. Some 2,000 to 2,500 undertakings would be brought within the compulsory terms of the Bill, and the number of motor vehicles involved would be approximately 20,000. In addition, the road motor vehicles of the railway companies would come over with the railway companies, and would number approximately 11,000, and there were 3,000 other vehicles in which the railways were financially interested. Altogether, between 30,000 and 35,000 road haulage vehicles would come over as a result of the compulsory terms of acquisition.

A 40-miles radius limit was taken for the "C" licences. This would enable all retail trade and the vast bulk of manufactured and merchanted commodities to be undertaken by "C" licensed traffic without any disturbance, but, over the 40-miles limit, there must be no uncertainty as to what was the aim. It had to be made quite plain that it would not be used as an instrument to sabotage the main purpose of the Bill. The trader who wished to carry his goods over the 40-mile limit, with a "C" licence, would have to prove his case to the licensing authority, and would have to prove that it was a legitimate traffic for his own business.

Road Passenger Services

Road passenger services were not provided for immediately in the Bill. The procedure to be adopted was for the policy Commissioners to promote area schemes, after consultation with the local authorities in their areas. It was the intention that ultimately they should be brought completely into an integrated national transport service. The Commission would promote schemes after consultation with the local authorities for the coordination of the passenger transport services covering the area. The assets and liabilities of undertakings in the area might be transferred to the body set up under the scheme, and if the objections were not finally disposed of, these area schemes became subject to a special Parliamentary procedure.

The docks and harbours represented important terminal points in our vast overseas shipping interests. The purpose of bringing the ports and harbours into this scheme was to ensure that whatever capital resources were needed to increase their efficiency, would be at their disposal.

The railway Transport Tribunal was the Railway Rates Tribunal renamed. It would take over the powers of the Railway Rates Tribunal, the remaining jurisdiction of the Railway & Canal Commission, and the remaining jurisdiction of the High Court on transport matters.

Charges in any system of transport were vital to trade and industry. There were something like 40 to 50 million different rates prevailing at the present moment. One of the most beneficial results of this Bill would be to simplify the jungle of rate charges in the railway and transport industry. It is perfectly farcical that those who had been responsible for our railway systems and transport charges should have been permitted to continue indefinitely this state of affairs. The machinery being established had been simplified, and he would welcome criticism and examination of this in Committee. If it would be strengthened, so much the better.

The Commission was to be charged, first, with the responsibility of paying its way, and then with the responsibility of submitting its rates structure to the Tribunal, while being responsible for the whole of the transport services of this country, no parts of it being able to compete in a way which made nonsense of the term "statutory rate." The 1921 Act, which permitted the railways to obtain their standard revenue, left aside altogether the development of road competition, which made nonsense of the whole of the provisions of that Act. For the first time in the history of transport, the British Transport Commissioners would be able to tackle the charges problem on a commonsense basis.

Opposition

Major Sir David Maxwell Fyfe (West Derby—Con.) said the Opposition believed that the introduction of this Bill was the greatest disservice this Government had so far done to the trade and industry of the nation. In this country there was a short distance between the ports and the centres of industry, and that had given us an advantage which our competitors did not possess, in the relative proportion that transport costs bore to general costs. We should not have these low costs under a monopoly which would be cumbrous and top-heavy, whose structural defects were as manifest as its powers were unlimited.

The Minister had given one reason for integration with regard to railway services, and that was the difficulty of doing capital works on the railways. He knew, as everyone knew, that the railway companies had their plans ready for renewals, replacements, and new works, and to take his own example, he knew it was planned and that everything was prepared to rebuild Euston Station. He had not said one word about the various claims which were made, and he had not supported even the parental and maternal document, in claiming that there would be any standardisation of equipment, improvement on handling costs, or anything of that kind. He knew very well the experience of Government control, with regard to the road services, during the war. When the Road Haulage Organisation attempted to exercise control, for the purpose of saving petrol and rubber, the result had been three weeks delay before the

return journey, until the trade unions themselves had complained about their members being kept away so much. Since that had been stopped, there had been an increase of 40 per cent. of usage of capacity of vehicles, and a reduction of 50 per cent. on empty journeys. Since that control and organisation were removed, there had been obtained five round trips a fortnight from London to Manchester, instead of one a week, which was all the organisation had been able to perform.

The last word on that effort to have Government control was said, not by anyone in the Conservative Opposition, but by Sir Cyril Hurcomb, Director-General of the Ministry of Transport, who ought to know. He said during the war:—

"Detailed allocation of traffic has not been practicable, nor, indeed, has it been easy to find any fixed principles on which to allocate at all. . . . It must be confessed that war-time allocation of traffic has not been based on principles or methods likely to be applicable to ordinary conditions."

Disintegration Perpetuated

The Minister must realise the complete self-contradiction of his own set-up. The whole basis of his structure was a fundamental division of the Executives, which would perpetuate disintegration. His structure fitted neither the facts of industry, nor the theories of Socialism which he was putting forward.

There had never been an inquiry into the technical merits of the various proposals for the industry as a whole, and the form of nationalisation he was suggesting had not been the subject of any inquiry, except in the case of a survey by a committee. The Opposition was certain that a public and impartial inquiry would be completely dangerous to the half-baked proposals in this Bill.

The Minister and the Chancellor of the Exchequer had paid lip service to the idea of an expansionist economy. Yet the first herald of that expansionist scheme, based on greater production, was to be a scheme for transport about which 99 per cent. of all the comments that had been made had remarked on its restriction and its rigidity, instead of its power to serve the public.

These proposals must take a decade to put into operation. It had taken eight to 10 years before amalgamations of the railway companies could be brought into being after the Act of 1921. Now, when we were enjoined almost daily, from the Government front bench, to look to our trade recovery, we were having the wildly irresponsible course of all the attention of every operator engaged in transport deflected from his ordinary work of serving industry into looking at what would be, and must be, his position under these nationalisation proposals.

There were four irreducible minima if transport was to be the true servant of industry. First, there must be freedom of user choice on the part of the user of transport; second, there must be unrestricted power of the trader to carry his goods in his own vehicles, as he does at present under the "C" licence; third, there must be the right and the opportunity of reward for efficient service and efficient running to be passed on to the user; fourth, in times of high production, such as we are looking to, there could afford to be greater elasticity of entry into the industry.

The proposals in the Bill took over the railways and long-distance haulage, and restricted all other haulage operators. They contained the power to make the consumer take the type of transport which the Commission or the Minister thought right; and they took away the safeguard of the trader to carry his own goods in his own vehicles.

The Minister of Transport was aiming at the position where it would be the responsibility of the national transport authority to ensure that traffic was carried by the form of transport which was most economical for the community. This would be achieved most simply and thoroughly by a completely co-ordinated service, in which the consumer did not specify the form of transport by which his goods were to be moved.

Complete Ministerial Control

The Central Transport Consultative Committees were only to be set up as the Minister thought fit. He would abolish them as he liked and there was no requirement that their conclusions can be published. They were a useful camouflage of complete Ministerial control.

The Minister should know that unrestricted power to run under a "C" licence was essential to a great variety of industries if they were to continue efficiently, or, indeed, to go on with their work at all.

It had been a matter of common knowledge, and fairly general complaint, that the main-line railway companies had found, since the Act of 1921 was put into effective operation, that they had had rather more than enough on their plates in dealing with the companies at their present size. It was now proposed that the Railway Executive alone should have to deal with an organisation about three times the size of the L.M.S.R. or the L.N.E.R.

No light had been shed on the way in which the Commission would bring about the co-ordination between the different Executives. There would have to be tripulation of staffs if this thing was to work at all, even at the slowest possible pace.

The Executives were to be separated from the commencement; the demarkation of function was to be preserved until further notice. There was complete control by the Minister, and that meant that he was to be subjected to all the political pressure which could be brought upon him.

The original idea of this form of nationalisation—of an independent statutory body which would have some chance to run the industry and to have independence and to put into operation the results of independent thinking—was abandoned. It was inevitable that, if the Minister was to take these wide powers of interference, the Commission could only be the retreat of the "Yes man" and the sycophant.

The members of the Executives were to be appointed by the Minister, who would approve of their salaries, and they were to receive functions delegated by the Commission, but nothing could be delegated by the Commission unless the Minister approved.

One might expect that, at any rate, the Minister would pretend that the new set-up would bring about some reduction in charges to the consumer and user of transport. But under this Bill, within two years the Commission must submit a charges scheme to the transport tribunal. There were to be no rules as to the charging scheme. So the tribunal might leave the charges or charging system to the Commission itself.

The Bill did not contain a word of guidance as to how the charges were to be arrived at. If the Government were coming forward with proposals for the nationalisation of transport, the House was entitled to know the policy of the Government with regard to charges, the vital question which could help or hinder industry in its recovery at the present time.

The compensation proposals amounted to a confiscation of income and a confiscation of livelihood. The selection of market values by a Government pledged to nationalisation was similar to a thief acting as counsel for the prosecution, judge, jury, court of appeal, and executioner in a sort of crazy people's court. The Government's proposal was to select market values which their very pledge had knocked down in advance.

The basis for compensation under the road haulage proposals of two to five years' profits for anyone who was put out of business was inequitable, and less than any arbitrator could possibly provide; but at any rate it was on an ascertainable basis, even if it was unsound. The passenger transport proposals reached the height of comedy. In the case of the local authority which was running a transport operation, the better that transport undertaking had been managed, the less benefit would the local authority get out of the compensation proposals. Finally, the Minister had given the keynote to the question of privately-owned railway wagons when he had said that a number of them should be scrapped. For that reason, apparently, their owners were to be paid scrapheap prices for their wagons, with no question or consideration of their replacement.

All the classic arguments against nationalisation were illustrated *ad nauseam* in this Bill. There was the loss of enterprise and initiative which was shown by the attack on the road transport industry. With regard to the freedom of the worker, they would see whether this structure could stand on its head for a sufficient length of time to come into any form of operation.

The increased cost to the consumer was obvious. The consumer was left with transport as his master instead of as his servant. This Bill gave an unexampled opportunity for political patronage and jobbery.

Liberal's View

Mr. Clement Davies (Montgomery—Lib.) said the Minister had been quite right in stating that this Bill was the biggest venture of this Government, or indeed of any Government, in the field of nationalisation. It was proposed to create one all-embracing industry of transport, which was a matter affecting the lives of everyone.

The Lord President of the Council, speaking on December 6, 1945, had rejected on behalf of the Government any dogmatic or doctrinaire approach, for or against nationalisation. The Minister had said that the transport industry entered into the major overhead costs of everything. Any increase in the cost of transport affected the price of all consumer goods. On transport depended the prosperity of every trade and business in the country.

Would this service be cheaper under the Bill? The burden of proof rested, according to the Lord President, on the Government. The Minister had said that there had been a public inquiry into the taking over of the whole of transport, its co-ordination, and rationalisation. There had been inquiries into the railways. One had been conducted by Sir Arthur Salter. Even that had finished in 1932. Many things had happened since then.

Sir Arthur Salter (Oxford University—

Ind.): "In the report to which Mr. Clement Davies has referred there was a recommendation towards the end, that there should be a special inquiry as to the point up to which, for different classes of goods, road traffic was more economical, and beyond which, rail transport was more economical. That kind of inquiry has not been made, certainly not in public, either before or since that time."

Mr. C. Davies continued that if the Government had made an inquiry of its own, surely the burden of proof lay on the Government and it should take the House into its confidence. He had always felt that the right thing would have been to use the lorry to feed and empty the railways, and not to run parallel with and alongside them. Instead of coming to the House and asking that restrictions on the railways should be removed, they had come to the Government and said, "Put further restrictions upon this new invention which is doing us damage, and put restrictions on the roads so that the traffic will come back to us." What, therefore, was the position in regard to railways? They were a monopoly and they had been so for a considerable time. That being so, Liberals had, right up to the Election, said that so far as the railways are concerned, they are of opinion that the right thing to do was to bring them under public control.

Fixation of Compensation

As regards compensation, why was it that, here, for the first time, except in the case of the Bank of England the Government had fixed its own compensation? Why would not it do the right thing by submitting the question of what was the right amount to be paid, to a proper tribunal? It was difficult to know what the proper figure was, because the railway companies were statutory companies. Rules in regard to their stock were laid down by Act of Parliament. What was more, they had been told by this House that they could earn up to £51 million. These railway stocks had been trustee securities, and there had been a deep obligation on trustees. It would have been very much better if the Minister had said that he would not lay down an absolute rule, but would submit the matter to a tribunal, to go into the facts and figures, and find out what is just and proper.

He would nationalise the railways and canals and have proper supervision, but was this a Bill that would really benefit the country as a whole, reduce the costs for the country as a whole, and help the trade that badly needed help at the present time? Having given it the most careful consideration, he had come to the conclusion that the structure was bad. There was now no yardstick by which one could measure efficiency. This was really a bad effort on the part of the Minister. This was a bad Bill, which he ought to reconsider.

Fetish of Public Ownership

Lt.-Colonel Cuthbert Headlam (Newcastle-upon-Tyne, North—C.) said that the truth of the matter was that Labour Members were obsessed with this fetish of public ownership. The Minister of Transport seemed to be a complete believer in improvisation. He had rejected with contempt any idea of an inquiry before he brought forward this measure. There had been no inquiry into the "integration" of transport.

What was the advantage of this type of public ownership? It made the Minister of Transport a dictator. It made him more powerful than any Minister had ever been in the history of this country.

Mr. W. Monslow (Barrow-in-Furness—Lab.) said that the average railway or road employee, whatever his position, believed that the time had come when the nationalisation of railways and road transport should be accomplished. He expected a Socialist Government to be a model employer, and he warned the Government that if it failed in that direction, the results would be catastrophic, and nationalisation would not be the factor it should be in promoting the well-being of our people.

Mr. C. W. H. Glossop (Howdenshire—C.) asked what really was the case for the nationalisation of the road passenger transport industry? The result of the Bill, if it became law, would be bureaucracy run riot. Criticism of the Commissioners would be very difficult, because there would be such a veil of secrecy with regard to their accounts that it would be almost impossible to extract any information from the Minister of Transport. It was the opinion, not of politically biased people, but of people who had spent their lives in running the road passenger transport industry, that under nationalisation bus fares would increase. They had already had the illustration of London Transport which was almost a nationalised system of transport. Under any system of nationalised transport there must be increasing fares, because the more profitable and cheaper routes had to subsidise the less profitable ones. If the Bill became law we should be saddled with an impersonal and soulless body, which was inevitable when the State was the director of the activities of industry.

Lt.-Commander G. I. C. Hutchinson (Edinburgh—C.) said that the Minister knew full well that competition had got to be, in a measure, eliminated. What would happen to our coastal shipping, which had a semblance of some life left free in this Bill, but for which certain schemes might be devised, and for which certain advisory committees were to be set up? Would the Minister be able to afford to allow the short-distance men to show up the inefficiency of the long-distance State organisation, or to allow coastal shipping to show up the inefficiency of either? Of course not. Sooner or later everything would have to be dragged into the net of nationalisation.

[The debate was adjourned until Tuesday, December 17].

Questions in Parliament

Diesel Locomotives

Mr. F. J. Erroll (Altrincham & Sale—C.) on December 9 asked the Minister of Transport what steps the main-line railway companies were taking to introduce diesel-electric locomotives for long-distance passenger and freight services.

Mr. Alfred Barnes: The railway companies are giving this matter close attention. The L.M.S.R. has two diesel locomotives on order for experimental purposes. The Southern Railway is proposing to carry out trials. Mr. Erroll may also like to know that the G.W.R. has placed orders for two gas turbine locomotives for use on long-distance services.

Mr. Erroll: Can the Minister say what the L.N.E.R. is doing?

Mr. Barnes: Not at the moment.

Thefts on Railways

Lieutenant William Shepherd (Bucklow—C.) on December 9 asked the Minister of Transport what was the loss sustained by the railway companies by pilferage in 1945 and 1938, respectively.

Mr. Alfred Barnes: In 1945 the four main-line companies and the Cheshire Lines Committee paid £2,525,405 in respect of 641,389 claims for articles lost or stolen. This compares with a payment of £180,462 in respect of 151,426 claims in 1938. I regret that separate figures for pilferage are not available.

Lieutenant Shepherd: Is the Minister able to tell us what has happened during this year; and would he say whether he considers there is any relation between this obvious decline in public morality and the success of the Government at the polls last year?

Mr. Hector Hughes (Aberdeen North—Lab.): Is the Minister aware that this is due to the practice of leaving goods wagons unattended and unlocked in sidings; and can he tell us in how many cases there were prosecutions and in how many there were convictions?

Mr. Barnes: I cannot answer the latter part of the supplementary question without notice, but I would assure Mr. Hughes that all possible precautions are taken by the companies.

Lieutenant T. C. Skeffington-Lodge (Bedford—Lab.): Can the Minister say whether there has been any diminution in thieving recently?

Mr. Barnes did not reply.

Transport Bill

Sir John Mellor (Sutton Coldfield—C.) on December 9 asked the Minister of Transport what consultations had taken place between his department and interested bodies before the Transport Bill was introduced.

Mr. Alfred Barnes: I have had discussions—some of them informal—in the past few months on the subject with a number of organisations representing trade, industry, agriculture, and transport. In addition, many representative bodies have provided me with information about their transport requirements.

Sir John Mellor: Will the Minister say in particular what consultations he has had with the railway companies and the road haulage interests?

Mr. Barnes: I have had no direct negotiations on the lines suggested by Sir John Mellor, but this matter has been discussed with representative bodies in a general way.

Sir John Mellor: Is not the Minister interested in the views of the railway companies and those of the road haulage interests?

Mr. Barnes: Very much interested.

Major E. A. Legge-Bourke (Isle of Ely—C.): Has the Minister been in consultation with representatives from the horticultural industry who are particularly affected?

Mr. Barnes: I have met agricultural representatives. I could not say whether that covers horticultural interests or not.

Mr. D. L. Lipson (Cheltenham—Ind.) on December 9 asked the Minister of Transport how many additional appointments would be required, with separate figures for men and women, to administer the proposals in the Transport Bill.

Mr. Alfred Barnes: I am not at present

able to state what, if any, net addition to existing staffs will be required.

Mr. Lipson: Will the Minister give an assurance that on the second reading of the Transport Bill he will have that information, because it is of very great importance?

Mr. Barnes: Certainly not. I cannot indicate on the second reading of the Bill what staffs will be required. I cannot do that until the Commission has had an opportunity of examining the staffs.

Lt.-Col. Sir Thomas Moore (Ayr Burghs—C.): Could the Minister inform us exactly what is the target figure of the Government in regard to the strength of the Civil Service?

Mr. R. De la Bere (Evesham—C.): Is the Minister aware that the greatest problem we have today is the acute shortage of manpower? Why add to the shortage by this addition of non-productive people?

Mr. Barnes: I would remind Mr. De la Bere that that is just what I resisted doing in reply to this question in refusing to anticipate a demand that at the moment is not there.

Embargo on Railborne Goods

Brigadier H. R. Mackeson (Hythe—C.) on December 9 asked the Minister of Transport what embargoes affecting East Kent had recently been placed on railborne goods; and what steps were being taken to ensure that no further embargoes were imposed.

Mr. Alfred Barnes: The position, of course, varies from day to day, but this morning the main restrictions on acceptance of traffic, other than coal and perishable traffic consigned to stations in East Kent, in force are from stations north of a line roughly from the Mersey to the Wash and from all companies' stations *via* L.M.S.R. London junctions. As I have already stated, the present difficulties are due in the main to shortage of locomotives, and all practicable steps are being taken to relieve the situation and to ensure the most effective use of the engines available.

Sir Waldron Smithers (Orpington—C.): Why did the Government export 720 railway engines in the first nine months of this year?

Mr. Barnes: That question should be put to the President of the Board of Trade or to the Minister of Supply.

Sir Waldron Smithers: It was, but he did not answer.

Output of Locomotives

Mr. W. Scott-Elliot (Accrington—Lab.) on December 9 asked the Minister of Supply what had been the total output of locomotives in each of the first three quarters of 1946; how many of those had been allocated for use at home and how many exported; and, in view of the needs of the British railways, if he would consider making a greater proportion of locomotives available for home use.

Mr. John Wilmot (Minister of Supply) in a written answer stated: The output of steam locomotives from railway and privately-owned shops combined was 164 in the first, 220 in the second, and 181 in the third quarter of 1946. In the first quarter, 63 were for the home railways, 13 for home industrial firms, and 88 for export; in the second quarter, 87 were for home railways, 21 for home industrial firms, and 112 for export; in the third quarter, 74 were for home railways, 13 for home industrial firms, and 94 for export. As regards the second part of the question, I would refer Mr. Scott-Elliot to the reply which I gave to Sir Waldron Smithers on November 26.

Station Name Signs

Mr. S. S. Awbery (Bristol Central—Lab.) on December 9 asked the Minister of Transport if he was aware of the difficulties caused to railway passengers in the provinces due to the small number of signs on the stations indicating the name; and if he would take steps to have the names of the stations prominently displayed in more than one place at all stations.

Mr. Alfred Barnes: Experiments to improve the effectiveness of station name signs are being carried out by the railway companies.

Resignation of Railway Staffs

Mr. Alfred Barnes on December 10 supplied the following statement to Mr. J. A. Sparks (Acton—Lab.) in reply to his question of December 2 asking the number and grades of permanently-appointed conciliation staffs of the four main-line railway companies who had resigned their employment since the withdrawal of the Essential Work Order:—

The number and grades of conciliation staffs of the four main-line railway companies, who, at November 16, 1946, had resigned from their employment since the withdrawal of the Essential Work Order, excluding retirements under age rule, or deaths, are as follow:—

Grade	Appointed	Unappointed
Footplate staff and cleaners	2,803	299
Locomotive staff	703	471
Signalmen	258	116
Guards	264	155
Shunters	419	311
Goods cartage	137	918
Goods handling	530	2,722
Permanent way	748	1,880
Signal and telegraph ...	101	132
Other conciliation grades ...	1,378	2,882
	7,341	9,886

The distinction between "appointed" and "unappointed" staff is slight, as during the war additional staff were recruited on an "unappointed" basis but are now, subject to satisfactory medical examination, being given permanent appointments.

Damage to Palestine Railways

Major E. A. Legge-Bourke (Isle of Ely—C.) on December 11 asked the Secretary of State for the Colonies what was the estimated loss to the Palestine railways due to destruction by terrorists and to the suspension of services; what effect that had had on the export of the citrus crop, potash, oil and foodstuffs; and if any steps were being taken to ensure a steady flow of those commodities to their eventual markets.

Mr. A. Creech Jones, in a written answer, stated: Material damage to the Palestine railways is estimated at £325,000; the loss of revenue since November 18 is over £3,000 a day. Shipment of the citrus crop has not yet been seriously affected, since it has been possible, at a cost to the industry of an additional £10,000 to date, to use motor transport for 50 per cent. of the crop. Shipment itself may be delayed should the present situation continue. Transport of potash by rail has been reduced to one-quarter, and the possibilities of using road transport are limited and expensive. I understand that the potash company will soon be compelled to stop production should there be no improvement. Oil transport by rail has been reduced by approximately one-third. Adequate stocks of cereals had been built up in the main towns, and there has so far been no food emergency.

Road Haulage Association Condemns the Transport Bill

At a conference held on December 16 at the Mayfair Hotel, London, Mr. Henry T. Dutfield, Chairman of the Road Haulage Association, reviewed the scope, provisions, and intentions of the Transport Bill, and pointed out some of the inevitable and undesirable consequences which would follow its passage through Parliament.

The Bill would, in effect, create a transport dictatorship by the Minister and his staff; men having, for the most part, no experience of transport operation. The Transport Commission, constituted by the Minister, would be subject to him in respect of its policy and its actions. The operators would be completely subject to him through the Commission.

The effect of the Bill would not be limited to the reiterated intention of the Government to control long-distance road haulage; it would lead straight to the total extinction of all independent hauliers, large or small, and irrespective of their radius of action. The Bill gives no information as to how the promised improvement in economy and in efficiency of transport is to be obtained, or as to the nature of the rates structure which would, sooner or later, be put into operation.

INCREASED NUMBER OF CIVIL SERVANTS

The proposal that hauliers, pending their total dissolution, and traders carrying their own goods by road, are to be restricted as to their radius of action, would involve the establishment of an immense supervisory organisation of civil servants, not themselves productive, but merely employed to ensure a decrease in the productive capacity of the road transport system, which is at present giving the public admirable service.

The extinction of the hauliers is to be brought about by one or other of two methods: either compulsory expropriation or restrictions such as to render it impossible for them to obtain a livelihood from their businesses.

As to the trading community, the Bill offers preferential treatment to huge organisations in the nature of multiple stores or cartels as compared with that accorded to substantial individual trading concerns. Again, it gives preference to substantial individual concerns as compared with small shopkeepers. In these respects, its provisions are totally opposed to what are generally regarded as democratic principles.

RESTRICTIONS ON PUBLIC

As to the public, it is to suffer by restrictions placed upon traders' operations, and by the abolition of the convenient and efficient facilities at present available to conduct the millions of small individual transport operations that now receive the prompt and personal attention of the small hauliers.

Mr. Dutfield added that already over 600,000 signatures had been collected to a petition against the Bill, and he estimated the final figure might be in the region of 2,000,000.

At the conference, Mr. Roger Sewill, Director of the Road Haulage Association, said that he had received a number of requests for his views on the reluctance of the promoters of the Bill to allow the Committee stage to be taken on the floor of the House. In his opinion this reluctance is due to the knowledge that, if too many people get to know too much about its anti-social tendencies and intentions, both it and the Government that has introduced it will indubitably be thrown out.

Notes and News

North Western of Uruguay Moratorium.—At meetings held on December 10 of the holders of the 6 per cent. second debenture stock (1894) of the North Western of Uruguay Railway Co. Ltd., and of the holders of the 5 per cent. first debenture stock of the Quarahim International Bridge Co. Ltd., resolutions were passed approving a new moratorium of interest on those stocks for one year to December 31, 1947, with powers to the stockholders' committee to extend it for two further periods of one year.

South African Royal Train Coaches Delivered to Birkenhead.—Six of the eight coaches of the Royal Train which will be used by the King and Queen during their tour in South Africa next year were sent by rail from Birmingham to Birkenhead on the first stage of their journey to the Union on December 15. On account of loading gauge difficulties, the journey was made at slow speed, with three halts for making adjustments before passing through tunnels, and the 88-mile trip occupied 15½ hr. The carriages had been mounted on special bogies which permitted them to be shifted laterally before negotiating tunnels and narrow bridges. There were three delays due to overheating of the axleboxes.

Barsi Light Railway Co. Ltd.—Gross earnings in the year ended March 31, 1946, reached the record figure of Rs. 4,336,446. The number of passengers carried was 2,817,836, and goods traffic amounted to 243,541 tons. Working expenses were higher under all heads, special items being increased dearness allowances to staff, and retiring leave pay and gratuities to men who had continued to serve throughout the war. The net earnings were Rs. 2,208,405 or, deducting relief claims and other items, Rs. 207,667, equivalent to £150,055. Two interim dividends, totalling 6½ per cent. for the year, have been paid already, and the directors recommend that £16,784 be carried forward to next year. On April 1 this year, the Government of the Nizam of Hyderabad purchased the Latur extension of the railway for £165,421, and the outstanding 4 per cent. Latur extension debentures were then paid off at 103 per cent. As from that date the company has worked the Latur extension on behalf of the Government.

East Midland Motor Services Limited.—Mr. W. T. James, O.B.E., Chairman of East Midland Motor Services Limited, speaking at the general meeting of the company on December 18 said that it had been the aim of the company for many years to co-ordinate and pool its services with those run by municipal and other operators on common routes, to provide the best facilities for the public. Many such arrangements were already in operation and new schemes were being considered to extend these facilities. The Joint Committee of representatives of the L.N.E.R. and L.M.S.R. and the company were also planning to provide further co-ordination between road and rail. The government's Transport Bill included provisions not only for acquisition of the railways, road hauliers, canals, and harbours, but also for the creation of State monopolies of road passenger transport in any area thought fit by the Minister of Transport, or by his British Transport Commission. This interference with an admittedly efficient industry, without any independent inquiry, was entirely unnecessary, would be contrary to the public interest, and could be supported only by ideological reasoning. Under the present system of administration, every aspect of road passenger transport was controlled fully and effectively by the Regional Transport Commissioners under the Road Traffic Act, 1930. The present highly co-ordinated system of omnibus services had been built up during the past quarter of a century from small beginnings into a well-organised and efficient industry, giving a first class system of road transport at a very low cost. Generally speaking, omnibus services were identified with the area in which they operated, were local in character, and under the control of experienced management with a knowledge of local traffic requirements. It was difficult to see how the public could be served better by a nationalised system, and it might well be that the government would come to realise that nothing was to be gained by jettisoning the present system and adopting a form of state monopoly.

Thos. W. Ward Limited.—At the recent annual general meeting of Thos. W. Ward Limited, the Chairman, Mr. Ashley S. Ward, said that there had been rapid developments during the year in the company's overseas trade. The demand for their products for export had necessitated considerable extension of staff and accommodation, and also the appointment of special representatives overseas. Referring to the balance sheet, the Chairman said that net profit was again appreciably higher at £160,856. The directors recommended a final dividend of 6¼ per cent. on the ordinary shares, making 10 per cent., less tax, for the year, plus a special Victory Bonus of 2½ per cent., less tax.

Annual Dinner of East Midlands Section, Institute of Transport.—The annual dinner of the East Midlands Section of the Institute of Transport was held at the Victoria Station Hotel, Nottingham, recently, when the President of the Institute was the principal guest. After the Loyal Toast, Councillor F. Mitchell (Vice-Chairman of the Nottingham City Transport Committee) proposed the toast of the "Institute of Transport," and the President replied. The "East Midlands Section and the Nottingham Graduate & Student Society" was proposed by Lt.-Colonel H. Bradwell (Deputy-Chairman of Traffic Commissioners, East Midland Area) and was acknowledged by the Chairman and by Mr. A. C. Elphick, Chairman of the Graduate & Student Society. Mr. W. Donaldson Wright proposed the toast of "The Visitors," which was acknowledged by Mrs. C. H. Stafford. The dinner was followed by a dance.

Through Tickets between Central London and South Essex.—Through tickets are now available from all L.N.E.R. stations between Stratford, Shenfield, and Ongar (including the Fairlop Loop) to a wide range of Underground stations in the Central area *via* the Stratford extension of the L.P.T.B. Central Line. This range will be extended if a reasonable demand for additional through bookings arises. Season tickets can be obtained between any L.N.E.R. station and any Underground station. They will be available by either Central Line or L.N.E.R. trains between Stratford and Liverpool Street without extra charge. Single and monthly return tickets where the Liverpool Street and Stratford line forms part of the journey will be available also by either Central line or L.N.E.R. trains without extra charge. Return halves of workmen's and cheap day return tickets will be available by either route.

Entre Rios Railways Co. Ltd.—Passenger traffic was again heavy in the year ended June 30, 1946, and the tonnage of general goods and cereals also increased, so that gross receipts rose by 5·8 per

British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices Dec. 17, 1946	Prices Rise/Fall
G.W.R.				
Cons. Ord.	60¾	47½	57½	—
5% Con. Pref. ...	124½	104½	122½	+ 1
5% Red. Pref. (1950)	107¾	101½	102½	—
5% Rt. Charge ...	137½	120	135½	+ 1
5% Cons. Guar. ...	135½	117	133½	+ 1
4% Deb.	118	106	125½	+ 1
4½% Deb.	119½	108	125½	—
4½% Deb.	124½	111½	126½	+ 1
5% Deb.	138	124	136½	+ ½
2½% Deb.	83	74½	92	—
L.M.S.R.				
Ord.	33	23½	30½	+ ½
4% Pref. (1923) ...	65	50	60½	—
4% Pref.	80½	69½	82½	—
5% Red. Pref. (1955)	106½	99½	100½xd	— 1
4% Guar.	106½	97	104½	—
4% Deb.	110½	102	113½xd	— 1
5% Red. Deb. (1952)	110½	103½	104½	—
L.N.E.R.				
5% Pref. Ord. ...	8½	5½	6⅞	—
Def. Ord.	4½	2½	3⅜	—
4% First Pref. ...	62½	49½	56½	—
4% Second Pref. ...	33½	24½	29	—
5% Red. Pref. (1955)	103	96	100½	—
4% First Guar. ...	104½	95	103½	—
4% Second Guar. ...	97	89½	97½	—
3% Deb.	91½	82½	9?xd	— 1
4% Deb.	109½	101	113½xd	— 1
5% Red. Deb. (1947)	103½	100	99	—
4½% Sinking Fund Red. Deb.	106⅛	103	101½xd	— 1
SOUTHERN				
Pref. Ord.	79½	63	75½	+ ½
Def. Ord.	27	20⅛	23½	+ ¼
5% Pref.	124½	104	121½	+ 1
5% Red. Pref. (1964)	117	107	110½	—
5% Guar. Pref. ...	135½	117	133½	+ 1
5% Red. Guar. Pref. (1957)	117	106½	110½	—
4% Deb.	117	104½	123½	— 1
5% Deb.	137	124	133½xd	— 2
4% Red. Deb. (1962-67)	112	104½	108½	— 1
4% Red. Deb. (1970-80)	113½	104	110½xd	— 1
FORTH BRIDGE				
4% Deb.	106	103	104½xd	— 1
4% Guar.	106	101	100xd	— 1
L.P.T.B.				
4½ "A"	125	117	127½	—
5% "A"	135	127	136½	+ 1
3% Guar. (1967-72)...	100	97½	105	—
5% "B"	125½	115	123	—
"C"	70	58	64½	—
MERSEY				
Ord.	37	31½	34	+ 1
3% Perp. Pref. ...	72½	68½	73½	—
4% Perp. Deb. ...	104½	104	111	—
3% Perp. Deb. ...	84	78½	92½	—
IRELAND*				
BELFAST & C.D.				
Ord.	8½	6	7½	—
G. NORTHERN				
Ord.	34	24½	39½	+ ½
Pref.	52½	42½	62	—
Guar.	80	68	97½	—
Deb.	97½	87½	107	—
IRISH TRANSPORT				
Common	—	—	18/9	—
3% Deb.	—	—	104½	+ 1

* Latest available quotation

cent. from ps. 20,888,717 to ps. 22,103,745. There was, however, an increase of 8·3 per cent. in working expenses, which amounted to ps. 17,625,563, largely on account of demands by employees as regards wages and working conditions. The net receipts of ps. 4,478,182, equivalent to £273,864, show a decrease of £4,278 on the comparative figures of the previous year. The debit balance at June 30, 1946, was £30,722, bringing the total debit carried forward to £883,912. Payment of interest on the 5 per cent. debentures has brought the arrears up to November 30, 1935.

Argentine North Eastern Railway Co. Ltd.—The report for the year ended June 30, 1946, shows an increase of ps. 132,067 in gross receipts, which amounted to ps. 15,700,876. Working expenses increased from ps. 10,365,697 to ps. 11,488,006, leaving net receipts of ps. 4,212,870 (equivalent to £256,061). After paying debenture interest accrued in the year, and interest on arrears and other charges, the debit balance was £4,656, bringing the total debit to be carried forward to £361,935. The principal causes of the increase of ps. 1,122,309 in working expenses were further concessions to employees both in respect of wages and working conditions. The operating ratio increased from 66·58 per cent. to 73·17 per cent. During the year covered by the report, a further six months' interest has been paid on the 5 per cent. "B" debentures and debenture stock, bringing these payments up to December 31, 1935.

Inauguration of South Western Section, Institute of Transport.—The South Western Section of the Institute of Transport was inaugurated at a luncheon held at Exeter recently. Captain Clement Jackson (General Manager, Plymouth City Transport) was in the chair, in the absence of Mr. W. Y. Smith-Saville, Chairman of the new section. Mr. Gilbert S. Szlumper (Past-President) represented the President of the Institute, who was unable to attend. A number of distinguished guests representing county and municipal activities in Devon and Cornwall were present. The Mayor of Exeter proposed the toast of the Institute, to which Mr. Szlumper replied, and the Lord Mayor of Plymouth proposed that of the new section, which was acknowledged by Mr. R. G. James, a Vice-Chairman of the section. The toast of the visitors, proposed by the Chairman, had responses by Sir John Shelley (Chairman of Devon County Council), Mr. E. F. Packer (Clerk to the Traffic Commissioners, Western Area), and Mr. H. J. S. Young (Honorary Secretary of the Western Section of the Institute). The Honorary Secretary of the new section is Mr. C. H. Preece, 48-50, Queen Street, Exeter.

Railways Rates Tribunal.—The Court of the Railway Rates Tribunal will sit on the following dates: January 21, February 18, March 18, April 22, May 20, June 17, July 15, October 21, November 18, and December 16, 1947, to hear applications as to the granting of new or the reduction of existing exceptional rates for which the consent of the Tribunal is required, and applications to the Tribunal for new exceptional rates or for the reduction of exceptional rates. The Court will sit on the following dates: January 28, April 29, July 22, and October 28, 1947, to hear applications to determine any questions as to the alteration of the classification of merchandise, or the alteration of the classification of any article, or the classification of any article not at the time classified, or any question as to the class in which any article is classified; applications as to the reductions to be made from the standard charges where damage able merchandise is carried under owner's risk conditions; and applications to determine any question as to whether any rebate is or was allowable or as to the basis on which any rebate should be or should have been calculated under the Railway Freight Rebates Scheme. Printed copies of the procedure to be followed in any of the above-mentionel applications may be obtained from the office of the Tribunal, Wellington House, 125 to 130, Strand, London, W.C.2.

San Paulo Railway Acquired by Government.—A deed was signed on November 8 transferring the San Paulo Railway from Santos to Jundiahy, with its branches, to the Brazilian Government, in accordance with Decree Law No. 9869 of September 13 (see our September 20 issue, page 314). The administration of the railway was taken over by the Brazilian Government on November 11. By the Decree of September 13, the railway was taken over in exchange for an undertaking by the Government to issue to the company public funds to secure the annuity payable to the company on the amount of recognised capital in accordance with the terms of Clause 36 of the contract of April 26, 1856. Under the same Decree the company was granted 30 days in which to formulate its claim for recognition to additional capital for treatment in like manner. This claim has now been presented, and may require some months for final settlement.

East Yorkshire Motor Services Limited.—Mr. J. S. Wills, Chairman of East Yorkshire Motor Services Limited, said at the company's annual general meeting on December 18, that he judged the Transport Bill to be one of the most amazing measures ever to be laid before Parliament. Under this Bill the Minister was given power to authorise the seizure of the whole or any part of a municipal or company passenger undertaking, and to ruin any undertaking he did not choose to take over. The thought of such powers, and of the enormous bureaucracy which would inevitably follow, filled one with alarm. Mr. Wills said that the company's co-ordination scheme with the Hull Corporation had worked smoothly since 1934, and he asked why the public of Hull and the East Riding should be forced, at any time, to change over to the use of a transport system directed from Whitehall, and forming only a small and insignificant section of a giant national monopoly.

Future of the Silverton Tramway.—Addressing the shareholders of the Silverton Tramway Co. Ltd. on September 25, 1946, Mr. V. J. Saddler, Chairman of the company, referred to the recent passing of an Act by the Australian Commonwealth Parliament for the unification of railway gauges. The proposed inter-State agreement authorised by the Act provides for the acquisition by the State of New South Wales, and conversion to standard gauge, of the 3-ft. 6-in. gauge line of the Silverton Tramway, and of the locomotives, rolling stock and equipment of the company. Mr. Saddler recalled that the Silverton Tramway Act of 1886 provided for the New South Wales Government to purchase the tramway upon six months' notice, and upon payment of a sum equal to 21 years' purchase of the annual divisible profits estimated on the average of the seven next preceding years. The Silverton Tramway operates 36 miles of 3-ft. 6-in. gauge line in the State of New South Wales, and has a stock of 14 locomotives, 17 carriages, and 911 wagons.

Pre-Stressed Concrete Sleepers on the Southern Railway

Section of the up through line between Forest Hill and Honor Oak Park, Southern Railway, laid about two years ago with Dow-Mac pre-stressed concrete sleepers, to enable the behaviour of this type to be studied under traffic conditions involving heavy steam locomotives, electric locomotives, and multiple-unit electric stock. The development of these sleepers was described in our May 17 issue

Railway Stock Market

Stock markets are closing the year with a firm tone in most sections, apart from British Funds which lost ground, attributed partly to lack of official support, although small scale selling of gilt-edged, which is often in evidence at the year-end, appeared to be more persistent than usual. There was selective buying interest in industrial shares, with the main emphasis on textiles and shares in other industries outside the threat of nationalisation. Iron and steels have been firm, partly on the benefits to be derived from the abolition of E.P.T. Locomotive engineering and kindred shares attracted more attention; Vulcan Foundry changed hands up to 31s. 3d.; North British Locomotive up to 29s. 6d., and Beyer Peacock at 24s. 9d., although elsewhere, Charles Roberts were lower at 85s.

Home rails displayed firmness during the three-day debate on the Transport Bill. As was to be expected, the City was mainly concerned with the possibility that the representations made by the Council of the Stock Exchange, and the Association of Investment Trusts, and the Investment Protection Committee of the British Insurance Association, might induce the Government to make a last-minute revision of the "compensation" terms. The widespread demand of responsible transport and financial authorities for a public inquiry into the questions of nationalisation and compensation terms was rejected.

The Minister of Transport admitted that the basis of compensation decided on was a "quick and easy method," apparently ignoring the representations of the Council of the Stock Exchange, because of doubts and uncertainties of recent years. Stock Exchange quotations are peculiarly unsuitable as a basis for compensation and that factor, and valuation on this basis must introduce indefensible anomalies as between one stock and another of similar standing.

The market was particularly hopeful that the proposed compensation might be amended in respect of London Transport 3 per cent. stock, 1962-72, bearing in mind that the latter carries the guarantee as to principal and interest by H.M. Government under the provisions of the Finance Act, 1934. The Stock Exchange Council in its statement pointed out that the broad effect on the public mind of the proposals in respect of this stock would be one of repudiation of a British Government guarantee.

The only inference from the transport debate is that the Government is afraid of a public inquiry, because this would not approve its proposals; and because of the decision in favour of a "quick and easy" method of securing nationalisation, the thousands of railway stockholders are to suffer a heavy fall in income. The Transport Bill debate has produced the biggest opposition so far to the policy of nationalisation.

Home railway junior stocks show little movement on balance, reflecting doubts whether in all cases dividends for 1946 will be maintained at the levels which ruled for 1945, when moderate withdrawals were made from reserves. Nevertheless, taking more than a short view, prices should go slightly above the compensation prices.

Debentures and guaranteed and senior preference stocks, which in most cases are well below their compensation levels, are likely to attract increased attention as a means of acquiring a British Government stock at a discount. Indeed, a certain amount of institutional selling of gilt-edged stocks has been reported with a view to reinvesting into home railway prior charges. To take a few examples. Great Western 4 per cent. debentures are 125½ at the time of writing, compared with the "take-over" price of 128$\frac{5}{16}$. L.M.S.R. guaranteed stock is 104½, compared with the 107$\frac{15}{16}$ "take-over" and L.N.E.R. 4 per cent. debentures 113¼ xd, compared with 118⅜. Moreover, Southern 4 per cent. debentures, now 124 xd, compare with the 128$\frac{5}{16}$ take-over. In view of the attractions at current levels, these anomalies can be expected to bring in buyers, particularly if in the meantime it is officially announced that the interest on the proposed British Transport stock is to be 2½ per cent. Little has been heard in the transport debate of the railways' right to standard revenue as defined in the 1921 Act, nor of the extent to which the Government gained from the fixed rental agreement during the war period when stockholders were prevented from benefiting to any extent from the big profits then earned by the railways.

Foreign railway securities have moved narrowly, with Argentine rails losing a little ground, awaiting news from Buenos Aires. The feature has been a big advance from 120 to 140 in San Paulo stock on the directors' advice to stockholders to await the result of the company's additional compensation claim. Later, part of the rise was lost, but stockholders in home railway stocks may well envy the comparison in price movements between their stocks and that of the San Paulo Railway.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1944/5	No. of Week	Aggregate traffics to date: Totals 1946/7	Totals 1945/6	Increase or decrease	Shares or Stock	Prices: Highest 1945	Lowest 1945	December 17, 1946
South & Central America	Antofagasta	834	8.12.46	£ 31,730	£ − 1,040	49	£ 1,655,330	£ 1,448,860	£ + 206,470	Ord. Stk.	12	8¾	10½
	Arg. N.E.	753	7.12.46	ps.342,700	+ps.48,400	23	ps.7,259,000	ps.6,963,200	+ ps. 295,800	,,	10	5½	15
	Bolivar	174	Nov., 1946	4,679	− 27	48	47,631	53,283	− 5,652	6 p.c. Deb.	8½	5½	6½
	Brazil	—	—	—	—	—	—	—	—	Bonds	25	17	26
	B.A. Pacific	2,771	7.12.46	ps.2,400,000	−ps. 82,000	23	ps.51,429,000	ps.47,552,000	+ ps.3,877,000	Ord. Stk.	7	5	7
	B.A.G.S.	5,080	7.12.46	ps.3,447,000	−ps.364,000	23	ps.75,350,000	ps.71,450,000	+ ps.3,900,000	Ord. Stk.	13¾	10½	12½
	B.A. Western...	1,924	7.12.46	ps.1,260,000	−ps.104,000	23	ps.27,925,000	ps.26,654,000	+ ps.1,271,000	,,	12¾	9½	15½
	Cent. Argentine	3,700	7.12.46	ps.3,142,200	+ ps.4,900	23	ps.72,023,382	ps.69,707,600	+ ps.2,315,782	,,	9¾	7	9½
	Do.	—	—	—	—	—	—	—	—	Dfd.	5	2⅞	5
	Cent. Uruguay	970	7.12.46	32,943	− 6,210	23	840,032	832,886	+ 7,146	Ord. Stk.	7½	4	9½
	Costa Rica	262	Aug., 1946	36,220	+ 4,160	9	73,313	63,153	+ 10,160	Stk.	16½	13	9
	Dorada	70	Nov., 1946	27,600	− 1,354	48	337,575	330,489	+ 7,086	1 Mt. Deb.	103	102	100½xd
	Entre Rios	808	7.12.46	ps.480,400	+ps.61,200	2	ps.9,733,900	ps. 9,675,700	+ ps. 58,200	Ord. Stk.	7½	4½	6½
	G.W. of Brazil	1,030	7.12.46	41,700	+ 10,900		1,449,100	1,255,200	+ 193,900	Ord. Stk.	30/−	23/6	20/−
	Inter. Ctl. Amer.	794	Oct., 1946	$685,711	+ $59,350	40	$8,710,553	$7,494,002	+ $1,216,551	—	—	—	—
	La Guaira	22¾	Nov., 1946	6,162	− 255	48	62,803	£8,797	− 5,994	5 p.c. Deb.	78	70	65
	Leopoldina	1,918	7.12.46	71,616	+ 16,541	49	3,001,871	2,635,427	+ 366,444	Ord. Stk.	4½	3½	3¾
	Mexican	483	31.5.46	ps.1,464,000	+ps.459,100	22	ps.,7,706,200	ps.13,441,600	+ ps.5,220,200	Ord. Stk.	¼	¼	¼
	Midland Uruguay	319	Oct., 1946	18,562	− 791	17	80,166	75,014	+ 5,152	—	—	—	—
	Nitrate	382	15.12.46	6,958	− 1,089	50	201,977	181,726	+ 20,251	Ord. Sh.	75/6	67/6	75/−
	N.W. of Uruguay	113	Oct., 1946	4,444	− 3,192	17	22,594	23,391	− 797	—	—	—	—
	Paraguay Cent.	274	6.12.46	$81,267	+ $ 902	23	$1,413,945	$1,392,227	+ $21,718	Pr.Li.Stk.	79½	77	60
	Peru Corp.	1,059	Nov ,1946	143,342	+ 4,003	22	773,049	704,271	+ 68,778	Pref.	10⅜	7¾	8½
	Salvador	100	Aug., 1946	c108,000	+ c14,000	9	c190,000	c189,000	+ c1,000	—	—	—	—
	San Paulo	153¼	—	—	—	—	—	—	—	Ord. Stk.	60¼	50½	134
	Taltal	156	Nov., 1946	5,575	+ 2,945	22	25,730	12,320	+ 13,410	Ord. Sh.	17/−	10/6	20/−
	United of Havana	1,301	8.12.46	38,493	− 5,448	23	1,136,346	1,052,300	+ 84,046	Ord. Stk.	3	1	1¾
	Uruguay Northern	73	Oct., 1946	1,306	− 919	17	5,210	7,348	− 2,138	—	—	—	—
Canada	Canadian National	23,482	Oct., 1946	9,382,250	+ 224,500	43	81,911,750	90,987,750	− 9,076,000	—	—	—	—
	Canadian Pacific	17,037	7.12.46	1,433,730	− 5,250	49	68,321,000	74,211,500	− 5,890,500	Ord. Stk.	24	14⅜	18¾
Various	Barsi Light†	202	Oct., 1946	17,887	− 2,415	30	162,315	151,567	+ 10,748	Ord. Stk.	131	123	113½
	Beira	204	Sept., 1946	90,848	+ 17,136	52	950,694	920,575	+ 30,119	—	—	—	—
	Egyptian Delta	607	10.10.46	20,766	− 3,914	32	396,785	374,935	+ 21,850	Prf. Sh.	10	8½	6½
	Manila	—	—	—	—	—	—	—	—	B. Deb.	71	55½	64
	Mid. of W. Australia... ...	277	Oct., 1946	20,833	+ 1,284	17	69,457	64,837	+ 4,620	Inc. Deb.	97½	85	70
	Nigeria	1,900	Oct., 1946	328,866	+ 30,729	30	2,594,380	1,607,174	+ 987,206	—	—	—	—
	Rhodesia	2,445	Sept., 1946	541,147	+ 24,052	52	6,174,663	6,069,663	+ 105,000	—	—	—	—
	South African	13,323	16.11.46	1,294,013	+ 240,837	32	37,392,575	33,171,037	+ 4,221,538	—	—	—	—
	Victoria	4,774	May, 1946	1,351,280	+ 4,246	—	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee